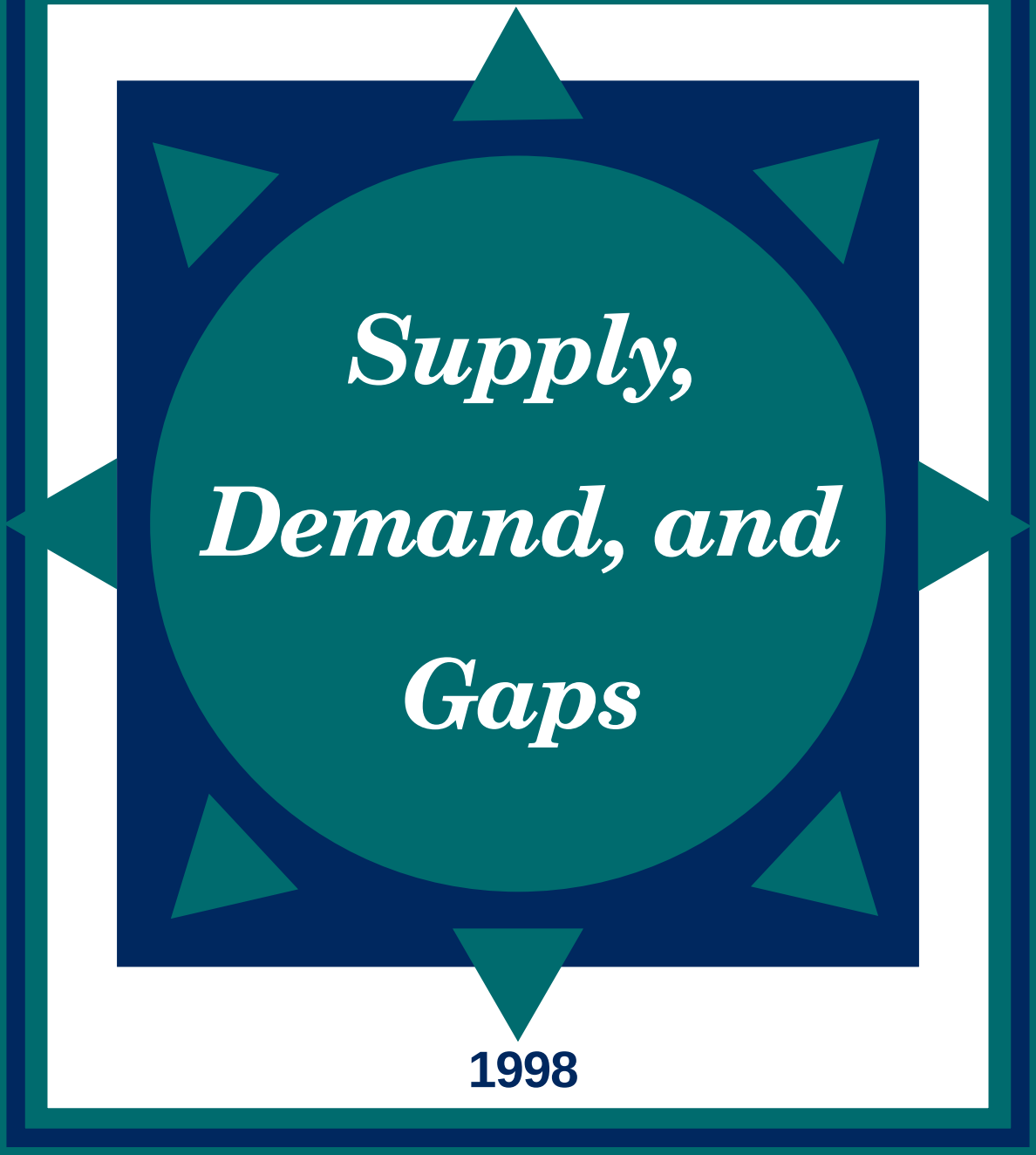
Workforce Training



1998

Washington State Workforce Training and Education Coordinating Board

WORKFORCE TRAINING AND EDUCATION COORDINATING BOARD

The Vision

The Workforce Training and Education Coordinating Board is Washington State's valued and trusted source of leadership for the workforce training and education system.

Mission Statement

The Workforce Training and Education Coordinating Board's mission is to bring business, labor, and the public sector together to shape strategies to best meet the workforce training needs of all of Washington's students, workers, and employers in order to create and sustain a high-skill, high-wage economy.

To fulfill this mission, Board members and staff work together to:

- Advise the Governor and Legislature on workforce training and education policy.
- Promote a system of workforce training and education that responds to the lifelong learning needs of the current and future workforce.
- Advocate for the nonbaccalaureate training and education needs of workers and employers.
- Facilitate innovations in policy.
- Ensure system quality and accountability by evaluating results and supporting high standards and continuous improvement.

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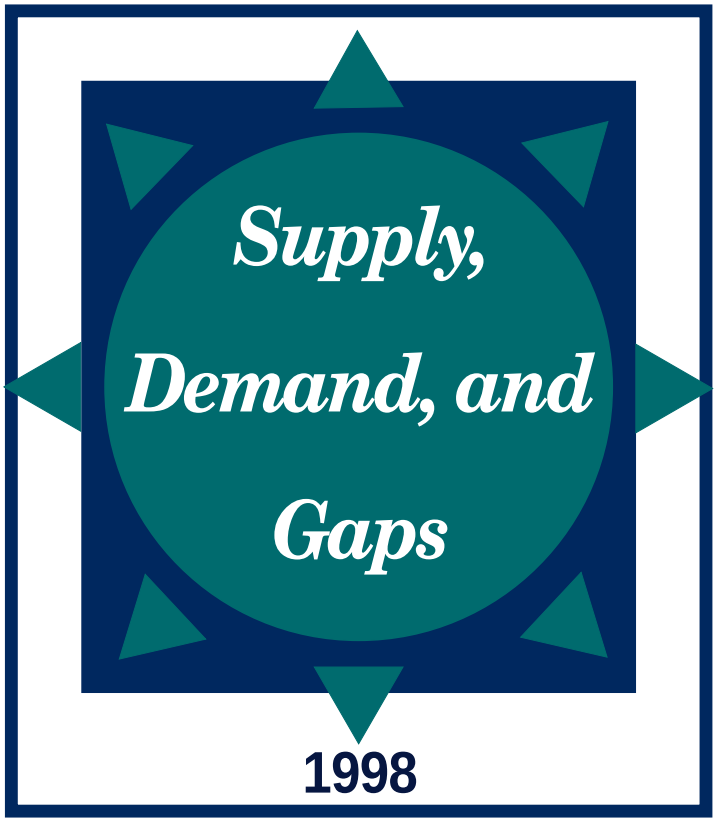

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Executive Summary

This report identifies the gaps between supply and demand for training in Washington and recommends strategies for reducing them. The Workforce Training and Education Coordinating Board (WTECB) prepared this report in response to an assignment established in RCW 28C.18.090.

To assess the supply and demand for training, the report considers the perspectives of both employers and workers, and separately analyzes the needs of three groups:

1. Youth
2. Adults
3. Adults With Barriers to Employment

The strategies for reducing the gaps include both changes in the way we do business and growth in the supply of training in order to better meet demand. Consistent with the mission of WTECB, this report emphasizes training for jobs that do not require a bachelor degree—80 percent of all jobs.

The following are the major findings and recommended strategies. Most of the strategies do not require additional appropriations beyond current budget levels.

Shortage of Skilled Workers

- There is a shortage of skilled workers, and it has been getting worse during continued economic growth. In 1995, 55 percent of employers had difficulty finding qualified job applicants. In 1997, 73 percent of Washington employers had difficulty finding qualified job applicants in the last 12 months.

- The most severe shortage is for workers with a postsecondary vocational diploma or certificate. Adjusting employer responses to reflect the makeup of their workforce, 64 percent of employers had *much* difficulty finding qualified applicants. This is higher than the percentage reporting *much* difficulty in finding workers *at any other level* of education.

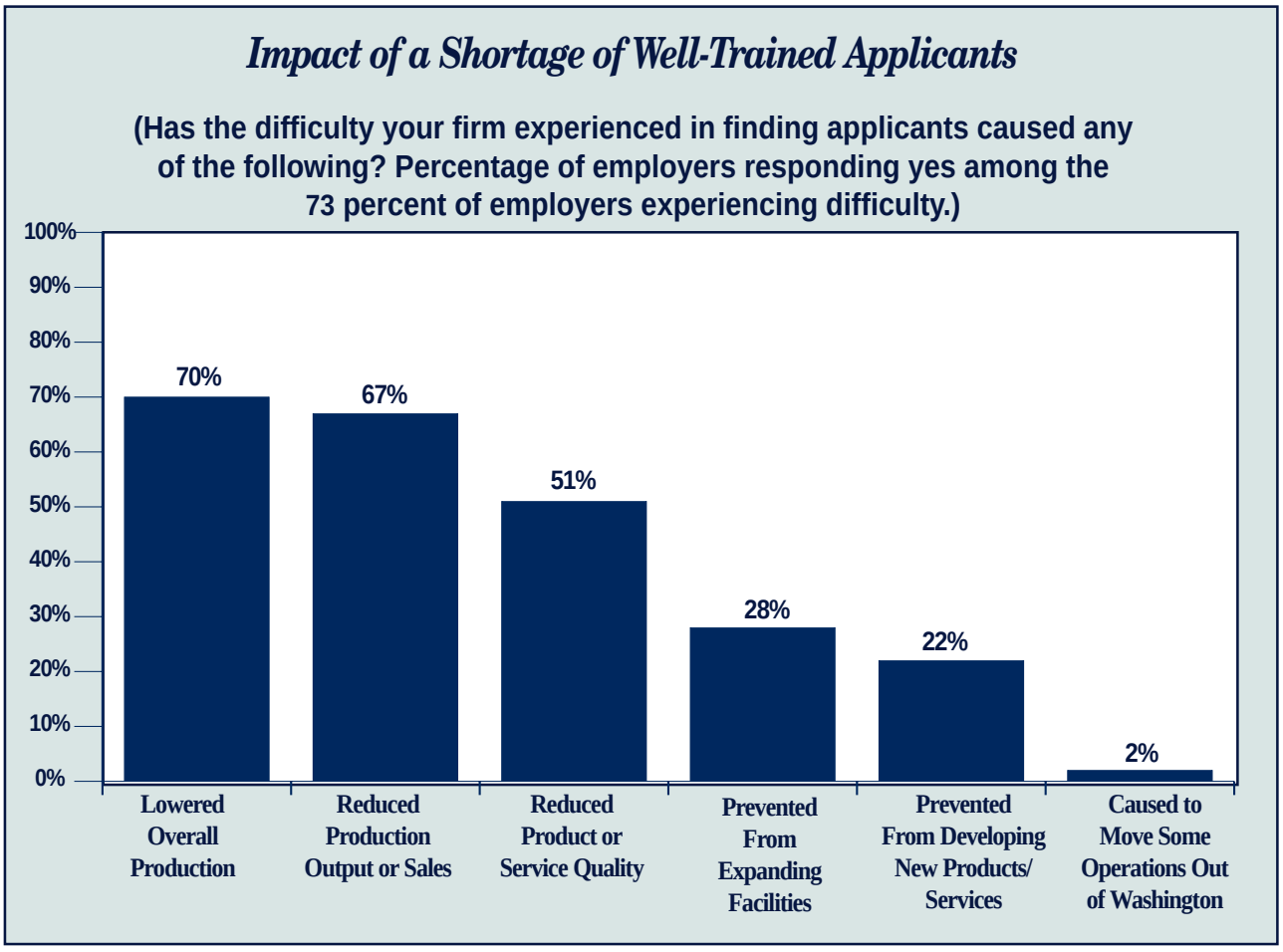
- The shortage of skilled labor is affecting the state's opportunity for further economic growth. Seventy percent of employers say the difficulty in finding qualified job applicants has lowered overall productivity, and 67 percent say it has reduced production output or sales. (See Figure 1.)

Youth

Supply, Demand, and Gaps

- Employers anticipate a significant decline in the hiring of workers without a high school diploma.
- Jobs requiring no education beyond high school will, however, remain a substantial share of employment, although wages will be relatively low compared to jobs requiring higher skills.
- Employers who hire workers with only a high school education most frequently report difficulty finding job applicants with job-specific skills, computer skills, and general workplace skills, such as good work habits and attitudes, communication skills, and the

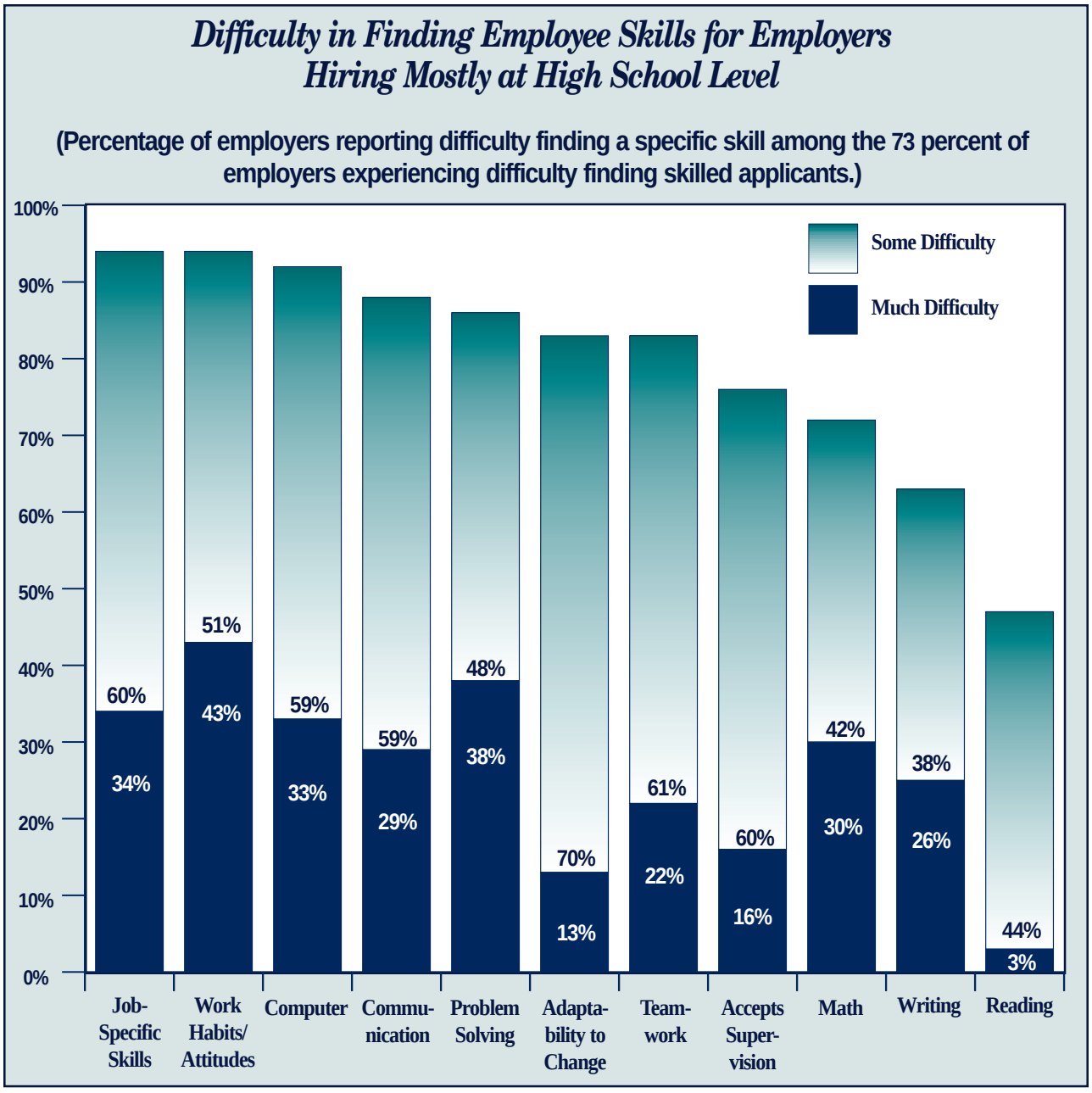
FIGURE 1



ability to solve problems. Job applicants with basic skills are less difficult to find. (See Figure 2.)

- The number of secondary school youth will rise 14 percent in the next 5 years after which growth will be slower.
- Federal funds that provide employment and training services to economically disadvantaged youth have been significantly reduced in recent years.

FIGURE 2



Strategies to Reduce the Gaps

Changing the Way We Do Business

- *Education Reform:* Continue education reform, especially progress on state education goals 3 and 4, which include the ability to solve problems and understand future career opportunities and the importance of work.

- *School-to-Work Transition:* Continue the development of a school-to-work transition system—combining vocational and academic education, integrating classroom and work-based learning, and articulating K–12 education with continued postsecondary education.

- *Vocational Education:* Continue improving vocational education by: 1) increasing the academic content of vocational programs; 2) increasing the use of career clusters; and 3) improving the capacity to measure student results.

Growth

- *Secondary Vocational-Technical Education:* Add 9,880 secondary vocational-technical education student FTEs by the 2003–04 school year in order to match demographic growth and maintain current participation rates.

(Strategies for out-of-school youth are included below under strategies for individuals with barriers to employment.)

Adults

Supply, Demand, and Gaps

- There is a substantial gap between supply and demand for workers with two or three years of postsecondary training. There are about 38,000 projected net job openings per year for workers with postsecondary vocational training, yet the state produces less than 20,000 graduates at this level per year. (See Figure 3.)

- There is an additional gap in meeting employer and worker demand for upgrading current workers' skills. Surveys of employers and adults indicate that there is demand for about 300,000 training "episodes" per year. It appears that the present system falls short of meeting this demand by over 100,000 training episodes per year. Moreover, the demand for upgrading will increase with population growth and increasing occupational technical skill requirements.

- The state's Worker Retraining Program (ESHB 1988) provides retraining for about 12,000 dislocated and other unemployed workers per year. Funding is scheduled to expire June 30, 1999.

- *The Job Skills Program*: Washington's program for customized training linked to particular employers and job openings, is funded at one-tenth of the national average for state-funded, customized training programs.

- Most employers do not provide even four hours per year of classroom training to the majority of their production or service workers.

Strategies to Reduce the Gaps

Changing the Way We Do Business

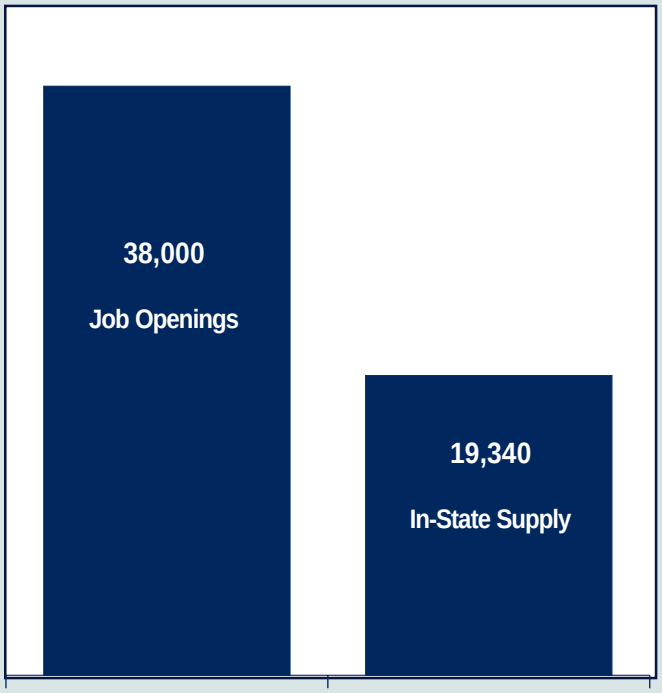
- *Compress Adult Vocational Training:* The community and technical colleges should compress the amount of time spent completing training programs in order to reduce the time participants spend out of the workforce and the time employers must wait for training to be completed.

- *Job-Linked Training:* The state should ensure funding for customized training linked to specific job openings. Such funding could provide retraining for dislocated workers, skills upgrading for incumbent workers, and provide training for workers with barriers to employment, including low income workers and those moving off welfare, among others.

- *One-Stop Career Centers:* The state should proceed with the implementation of a system of One-Stop Career Centers in order to serve customers more efficiently. One-Stop Career Centers will provide access to basic employment-related services such as assessment and counseling, information about government programs, labor market information, consumer information about training provider results, and job placement assistance.

FIGURE 3

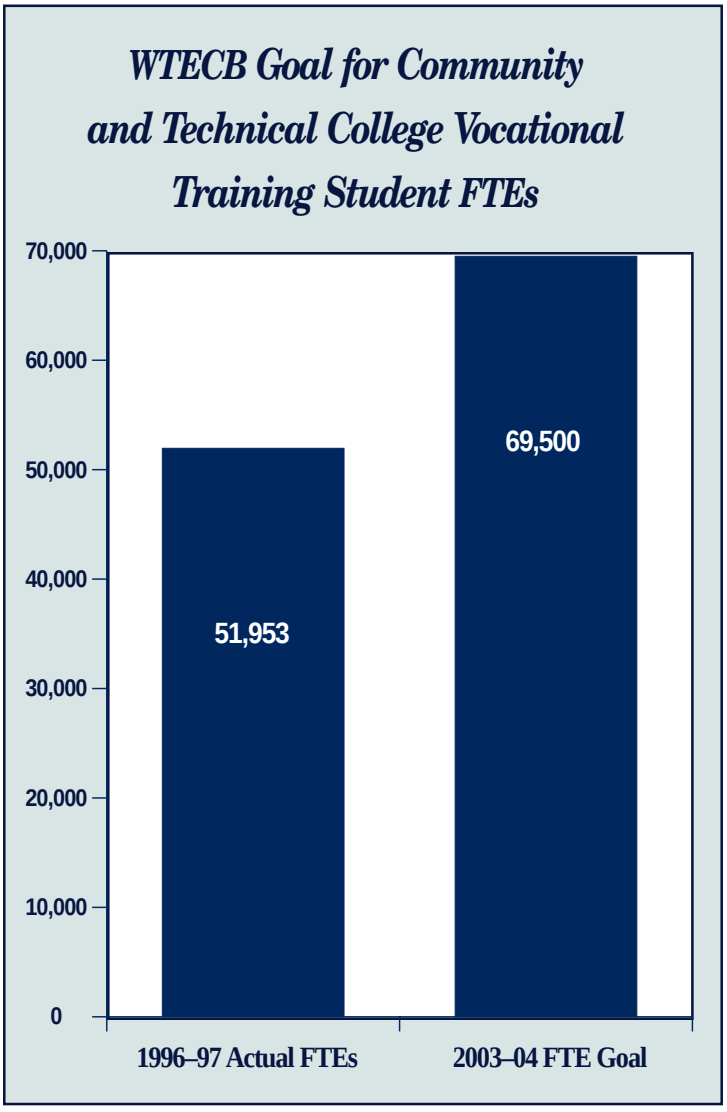
Annual Labor Market Demand and Supply for Postsecondary Vocational Credentials



Growth

- *Community and Technical College Training Capacity:* Add 17,600 community and technical college vocational training student FTEs by the 2003-04 school year, an average of 3,520 more FTEs each year for 5 years. (See Figure 4.)

FIGURE 4



- *Private Career School Capacity:* Encourage private career schools to increase enrollment about 7 percent by the 2003-04 school year.

- *Employer Training Tax Incentives:* Consider tax incentives to increase employer investments in training.

Adults With Barriers to Employment

Supply, Demand, and Gaps

- There are over 250,000 economically disadvantaged adults in Washington State. Roughly one-third receive some training or postsecondary education during a year.

- At least 200,000 Washington adults are deficient at the most basic skill level tested by the State Adult Literacy Survey. About 60,000 adults with basic literacy needs participate in adult literacy programs per year.

- Only 10 percent of employers provide even 4 hours of basic skills instruction per year to any employees.

Strategies to Reduce the Gaps

Changing the Way We Do Business

- *Performance-Based Funding:* Increase the ways that adult basic skills instruction and the Job Training Partnership Act (JTPA) Title II for the economically disadvantaged use performance-based funding.

- *Integration of Basic Skills With Work and Vocational Training:* Increase the integration of basic skills instruction with workplace experience and vocational training.

- *Coordination of Adult Basic Skills Programs:* Create a new Washington State Plan for Adult Literacy.

Growth

- *Community and Technical College Basic Skills Capacity:* Add at least 420 adult basic skills student FTEs in work-related adult basic skills education between the 1999-2000 and the 2003-04 school years in order to match demographic growth and maintain current participation rates.

Systemwide Strategies to Reduce the Gaps

Changing the Way We Do Business

- *Regional Alliances*: Pilot voluntary regional alliances of business, labor, and the public sector. The alliances will assess needs, analyze resources, evaluate results, and create strategic plans for workforce development in their region.

- *Vertical Integration*—Linking Programs for Sequential Skill Development: Operating agencies in the workforce development system should ensure that all programs end in a competency-based credential fully accepted by the next level of learning. WTECB, in coordination with state and local partners, will establish a working committee to review efforts to identify the core workplace competencies needed for entry-level workers. The committee will then propose next steps to facilitate development of a credential to be issued upon attaining those competencies.

Introduction

This is the second analysis of the supply and demand for training in Washington. Substitute Senate Bill 5992, enacted in 1995, requires the Workforce Training and Education Coordinating Board to assess the demand for workforce training, the supply of training, the gaps between supply and demand, strategies for reducing the gaps, and the costs. WTECB is to administer such assessments every two years and to consider the perspectives of both employers and workers. Consistent with the mission of WTECB, the analysis focuses on training for jobs that do not require a bachelor degree, approximately 80 percent of all jobs.

Workforce training is vital to the economic well-being of Washington's workers and businesses. Heightened competition, both interstate and international, technological change, and industrial restructuring show no signs of decreasing. The result is continuous change in labor markets, with major influences on the skill needs and income levels of the state's workforce and on business performance. Real average wages of workers with only a high school diploma fell 12 percent from 1980 to 1990, and wages of workers without a high school diploma fell 27 percent.[1] Seventy-three percent of Washington employers have recently had difficulty finding qualified job applicants. Over 84 percent of the firms that had trouble finding qualified workers indicated the difficulty lowered their output, product or service quality, or productivity.[2]

Methods

The supply and demand analysis is broken down into broad categories of the working age population. This facilitates the development of multiple and distinct strategies for bridging different kinds of gaps. The report focuses on three groups: youth, adults, and adults with barriers to employment. But, the boundaries between the categories is indistinct. For example, existing youth programs have varying upper age limits ranging from 21 to 25 years of age. Adults with barriers to employment include the economically disadvantaged and adults lacking in basic skills, and individuals may belong to one or both of these groups.

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[1] Office of Financial Management, *Washington Trends: Economy, Population, Budget Drivers, Taxes, and Spending*, 1995.

[2] WTECB 1997 survey of employers.

The report addresses supply and demand with attention to educational levels and the adequacy of workers' skills. Both the quantity and quality of the workforce are considered. The report also presents strategies for bridging the gaps between supply and demand.

This is a very complex issue, and much of the desirable data is not available. In the absence of more detailed data, direct quantitative estimation of supply and demand for training is, in many cases, not possible. Individual wage reports for Unemployment Insurance, which provide quarterly employment and earnings information on 85 to 90 percent of working Washingtonians, provide a valuable source of information, but they include no information on worker characteristics or occupations. With the exception of the Census, survey data on Washington's workers are sparse, infrequent, and unstandardized. Much the same is true with employer surveys. There are many aspects of this complicated and multi-faceted issue that we have not been able to address fully given the resources and data available.[3] The estimates in this analysis could be substantially improved by additional data.

The report draws upon recent state surveys conducted for WTECB; other surveys of Washington and national samples: the 1990 Census; Employment Security Department projections; the State Adult Literacy Survey; and management information from the Employment Security Department, State Board for Community and Technical Colleges, Higher Education Coordinating Board, and Office of Financial Management, among other sources. Approximately 1,000 firms responded to the employer survey conducted for WTECB by Battelle Memorial Institute in the fall of 1997. The responses have been weighted so that the percentages reported here reflect the actual population of employers in the state. (Firms employing fewer than five individuals and federal employers were not surveyed.) The projections of higher education participation rates and policy changes have been developed in cooperation with the Office of Financial Management.

Overview of Supply

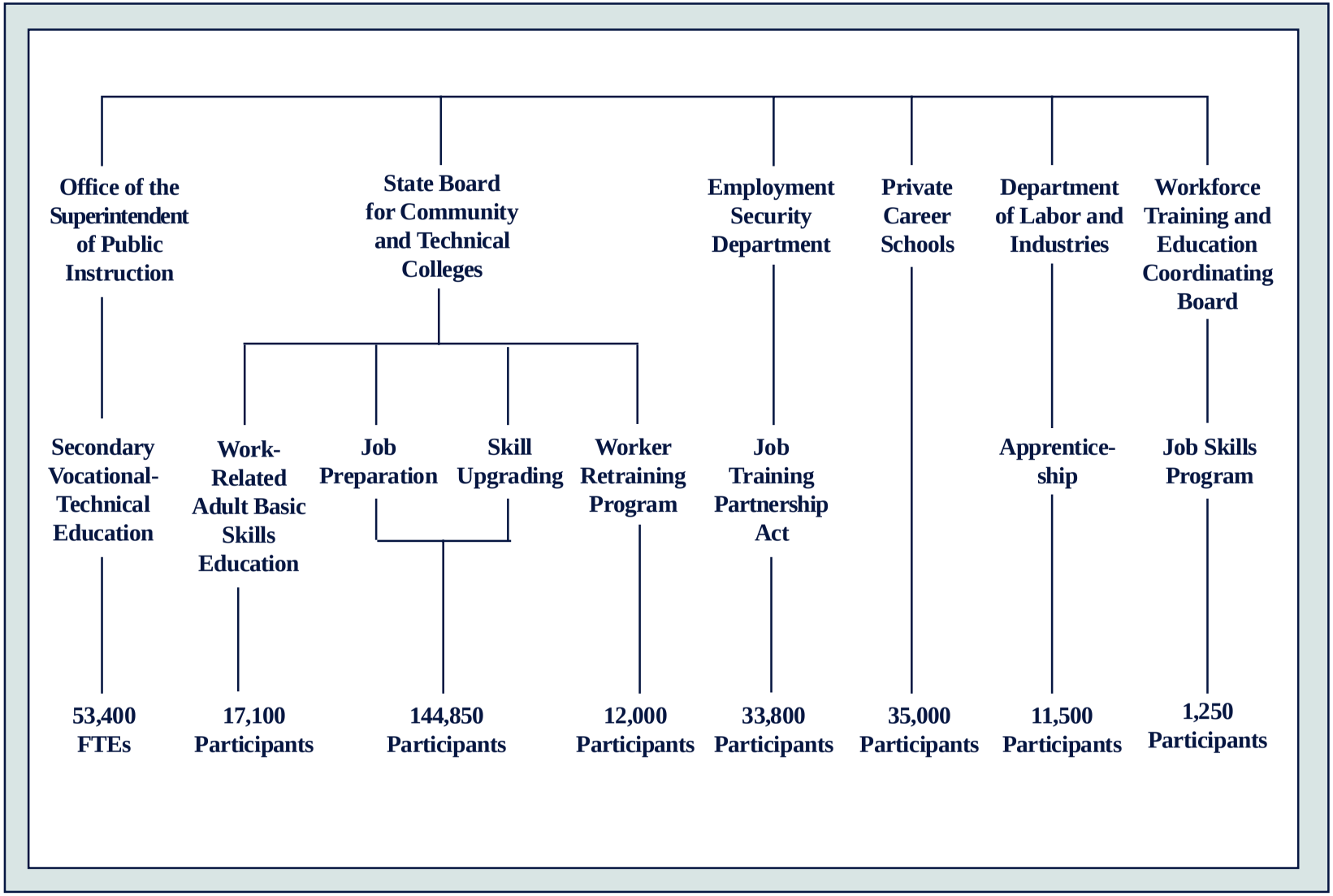
Figure 1 illustrates the major components of the workforce training system that are analyzed in this report and the approximate number of participants during the 1996-97 school or program year. (Student FTEs and participant head counts are not comparable.) Appropriations for these programs totaled approximately $675 million, constituting 5 percent of the state's general fund budget.

[3] Several programs that serve particular populations and that, in general, are programmatically separate from the rest of workforce training have not been included in this analysis. These omitted programs include Vocational Rehabilitation, Developmental Disabilities, and training provided in adult and juvenile correctional facilities.

Workforce Training and Education Programs

1996–97 Participation

FIGURE 1



The Shortage of Skilled Workers

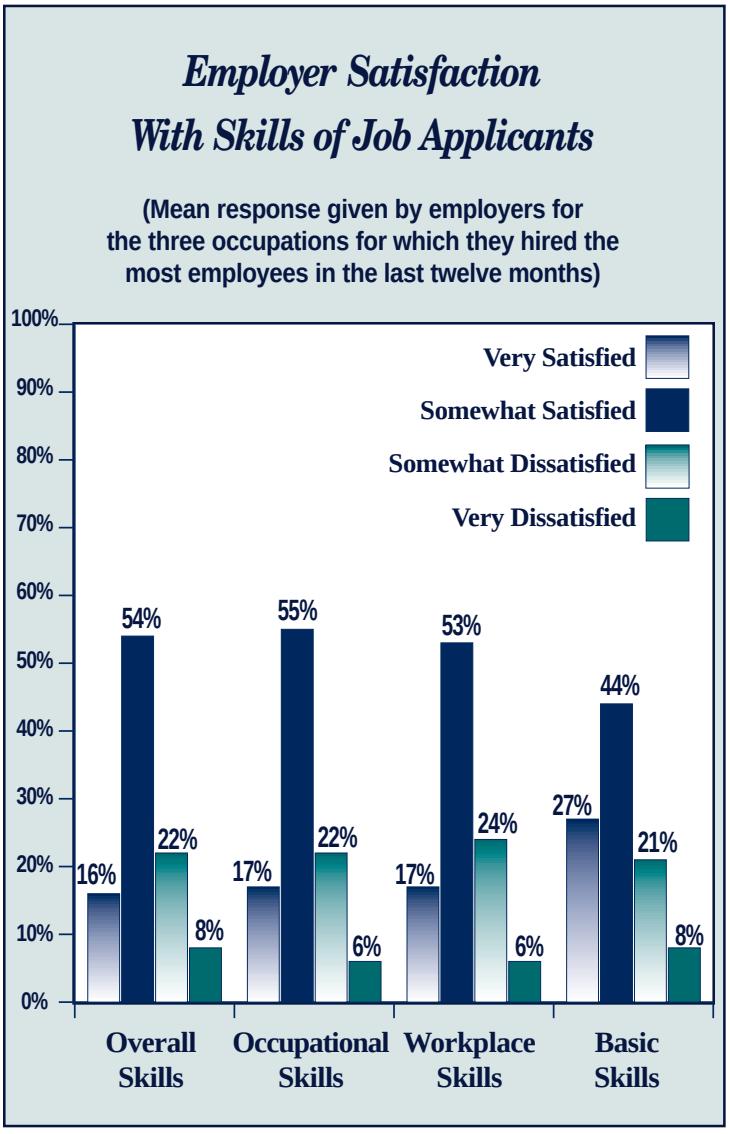
In the 12 months preceding WTECB's 1997 statewide survey of employers, most Washington employers had difficulty in finding qualified job applicants. The types of skills employers most frequently had difficulty finding were job-specific and general workplace skills. Employers also frequently reported having difficulty finding workers with vocational skills normally obtained at the postsecondary level. According to most employers, the shortage of skilled labor had lowered productivity and reduced production output or sales.

Skill Quality of Job Applicants

In 1997, 73 percent of Washington employers had difficulty finding qualified job applicants in the last 12 months. This was an increase from 1995, when in response to WTECB's survey, 55 percent of employers reported difficulty finding qualified job applicants. This increase is undoubtedly linked to the increasing strength of the state's economy and the corresponding drop in unemployment.

In order to analyze the types of skills employers had the greatest difficulty finding, we surveyed employers about their satisfaction with various skills of recent job applicants. Employers were asked to list the three occupations for which their firms hired the most employees in the last twelve months. Then they were asked how satisfied they were with the skills of the applicant pool for each of the three occupations. (See Figure 2.)

FIGURE 2



Most employers said they were satisfied with the skills of those applicants who sought employment with their firm. However, most reported being somewhat satisfied with these skills, with only a few reporting they were very satisfied. For example, when employers were asked to rate the overall skill level of applicants for the 3 occupations for which they hired the most employees in the last 12 months, 16 percent of the employers said they were very satisfied with applicants' skills, 54 percent said they were somewhat satisfied, 22 percent were somewhat dissatisfied, and 8 percent indicated they were very dissatisfied with these skills.

Employers were asked to rate their satisfaction with applicants' skills in three general areas, again, using the three occupations for which they hire the most employees. These areas were occupational skills, workplace skills (the ability to communicate with coworkers, follow directions, adapt to changes, good work habits, and attitudes), and basic skills (reading, writing, and math).

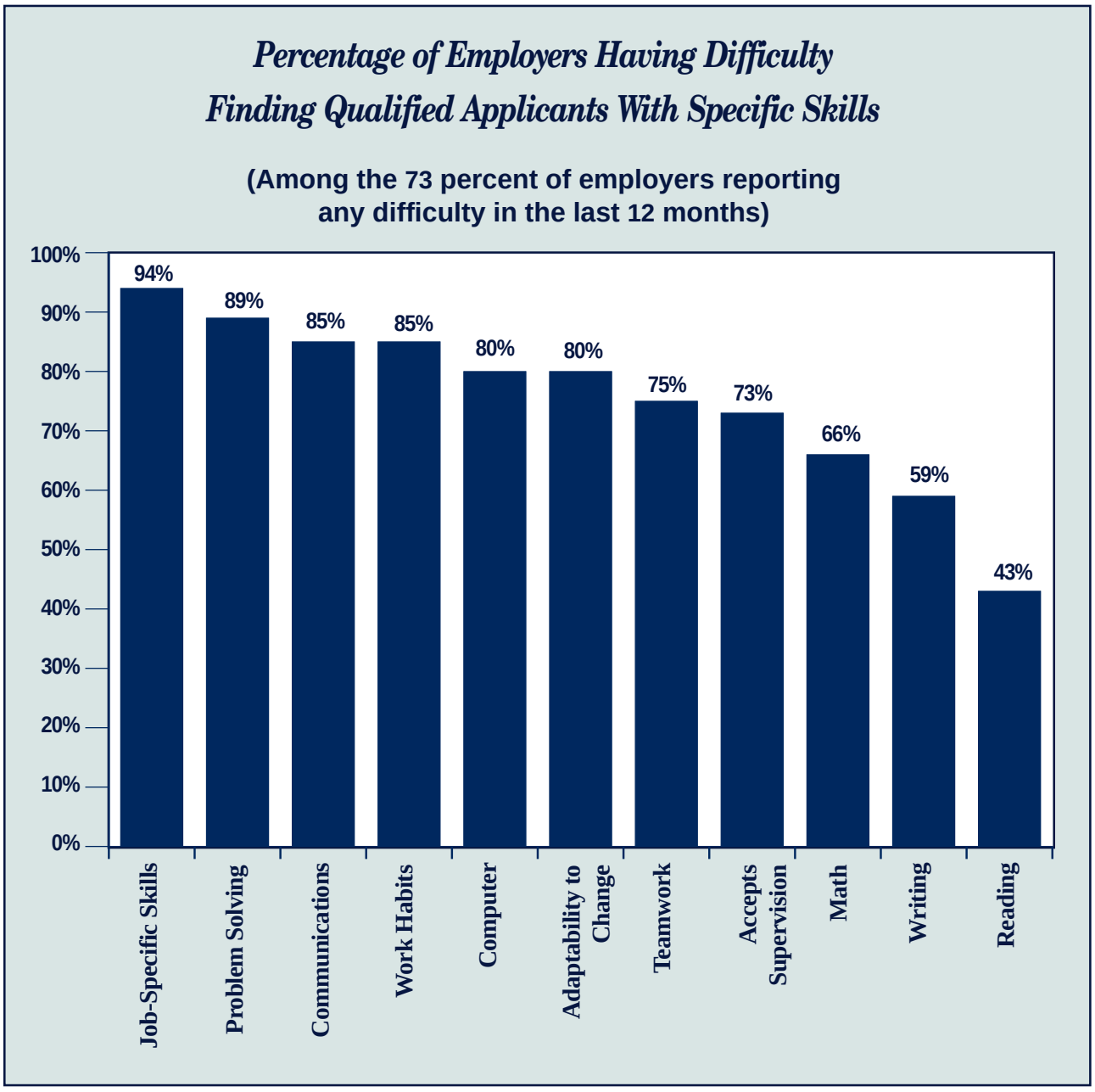
Employer responses indicate a somewhat mixed pattern of satisfaction with applicants' skills in these three areas. While approximately the same percentage of employers reported being either somewhat or very satisfied across the three categories, the percentage of employers who reported being very satisfied with applicants' basic skills was significantly higher than the percentage who were very satisfied with applicants' occupational or workplace skills. Twenty-seven percent of employers reported being very satisfied with the basic skills of applicants. Only 17 percent were very satisfied with these applicants' occupational skills. Seventeen percent also reported being very satisfied with their workplace skills.

The study also asked employers about their experiences in finding qualified job applicants in general, not just for the three occupations for which their firm had recently hired the most employees. Figure 3 shows the responses among the 73 percent of employers who had difficulty finding qualified job applicants in the last 12 months.

While many employers said they had difficulty finding applicants with basic skills, even more had difficulty finding applicants with job-specific skills, general workplace skills, and computer skills. Ninety-four percent of employers reported significant or some difficulty finding qualified applicants with job-specific skills. From 80 to 89 percent of employers said they had difficulty finding applicants who could adapt to change, communicate, had good work habits, and who had the ability to solve problems. Eighty percent of employers reported difficulty finding applicants with computer skills. In contrast to these very high frequencies, 43 percent of employers, among those who had difficulty finding qualified applicants, reported difficulty finding applicants with reading skills, 59 percent with writing skills, and 66 percent reported difficulty finding qualified applicants with math skills.

These are virtually the same relative areas of difficulty found by WTECB's 1995 employer survey. More employers reported having difficulty finding qualified applicants in every skill area. The areas where difficulty increased the most were computer and communications skills.

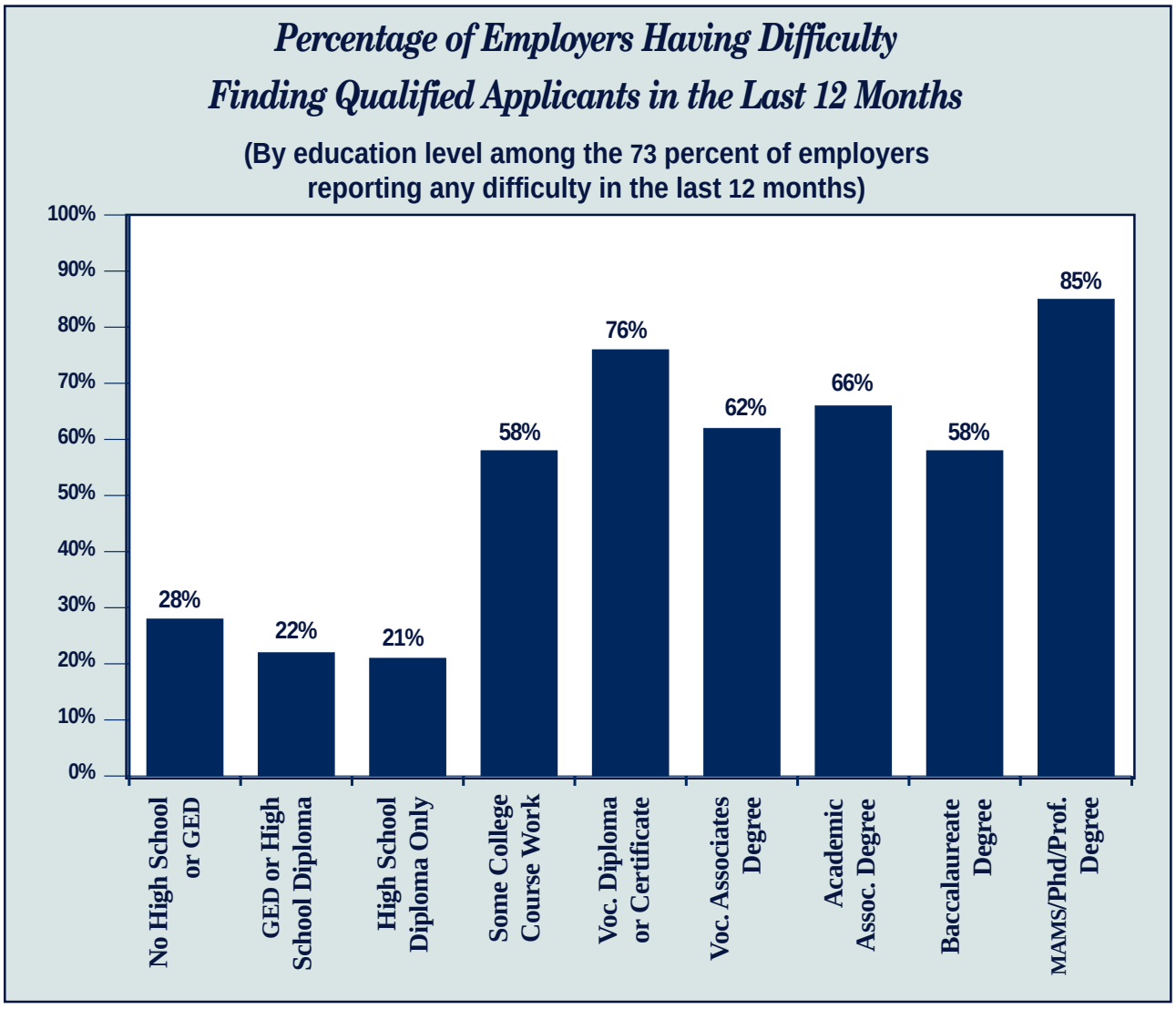
FIGURE 3



Shortage of Job Applicants With Postsecondary Vocational Training

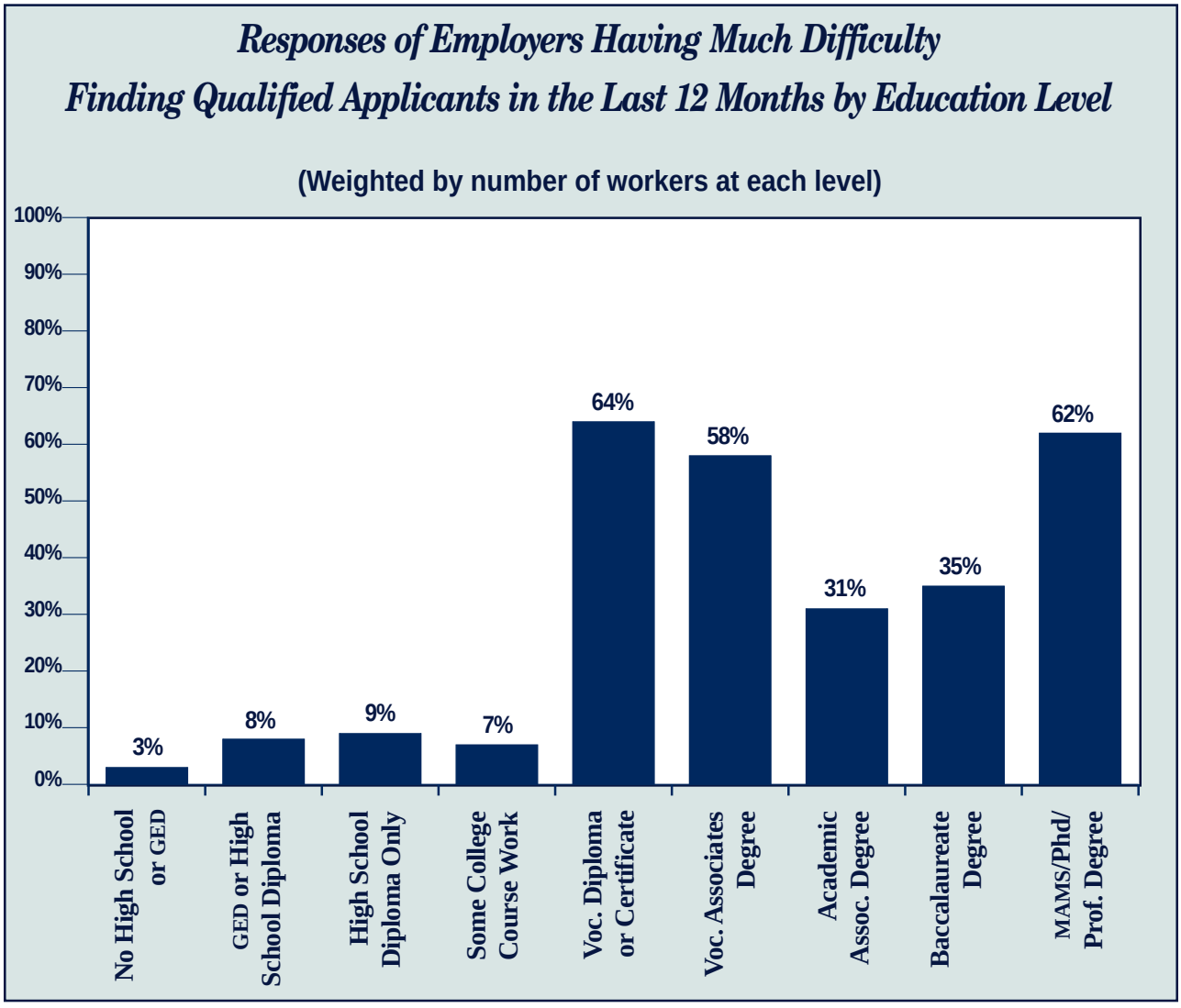
WTECB asked employers about their difficulty in finding qualified job applicants with the formal education required to fill job openings. Seventy-six percent of employers who had difficulty said they had difficulty finding applicants with a vocational diploma or certificate. (See Figure 4.) Vocational credentials were second only to graduate and professional degrees in the percentage of employers having trouble finding qualified applicants. Moreover, 38 percent of employers said they expected to increase their hiring of workers with vocational diplomas or credentials in the next 5 years, and only 3 percent said they expected to decrease hiring such workers.

FIGURE 4



To further investigate the shortage, we focused on those employers reporting *much* difficulty in finding qualified applicants and weighted survey responses to reflect the differing educational composition of employers' workforces. (The weighting takes into account the number of workers employed at each educational level. For example, when calculating the percentage of employers who had difficulty finding applicants with a vocational credential, the response of an employer who has 100 workers with a vocational credential counts more than that of an employer with only 10 workers at that level.) When weighted by the number of workers at educational levels, 64 percent of employers had *much* difficulty in finding applicants with a vocational diploma or certificate. *This is more than had much difficulty finding job applicants at any other educational level*. (See Figure 5.)

FIGURE 5



This is the third statewide survey of employers to report that employers frequently have trouble finding workers with a postsecondary vocational credential. Two years ago, WTECB reported that 81 percent of employers who tried to find job applicants with a vocational degree or certificate had difficulty finding qualified applicants—a higher percentage than for any other educational credential. And, in 1990 when the Office of Financial Management's "Investment in Human Capital" survey asked employers at what level of education they had the most difficulty finding in workers, 53 percent said technical skills, such as taught in vocational programs.

Impact of the Shortage of Skilled Labor

The shortage of skilled labor has limited the state's economic development. WTECB's 1997 survey asked employers about the impact on their firm. Among employers that had trouble finding qualified applicants, 70 percent reported the difficulty resulted in lowered overall productivity. Sixty-seven percent said it reduced production output or sales, and 51 percent indicated it reduced product or service quality. Less frequently, employers reported the shortage prevented them from expanding facilities (28 percent of employers), prevented them from developing new products or services (22 percent), or caused them to move some operations out of the state (2 percent). (See Figure 6.) There is no way to measure the impact of the shortage on the decisions of out-of-state firms that considered locating facilities in Washington.

Employer-Provided Training[4]

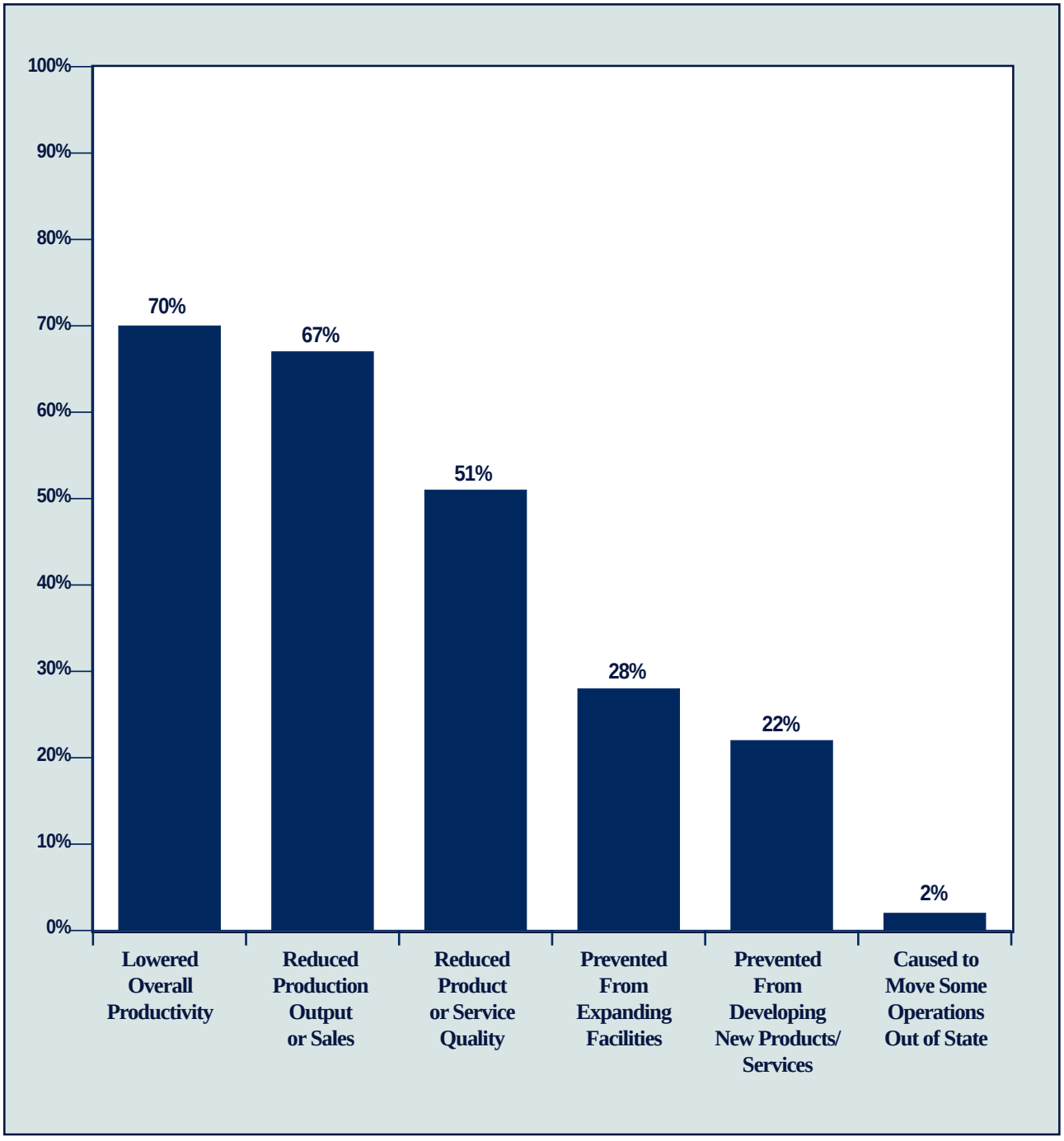
One way of responding to the shortage of skilled labor is for employers themselves to provide training. According to the survey results, 66 percent of employers who increased their training of employees during the past 3 years indicated that one reason was new hires did not have necessary skills.

[4] For more information on employer-provided training, please see WTECB, "Workforce Training Results – 1998."

Impact of a Shortage of Well-Trained Applicants

(Has the difficulty your firm experienced in finding applicants caused any of the following? Percentage of empoyers responding "yes," among the 73 percent of employers experiencing difficulty.)

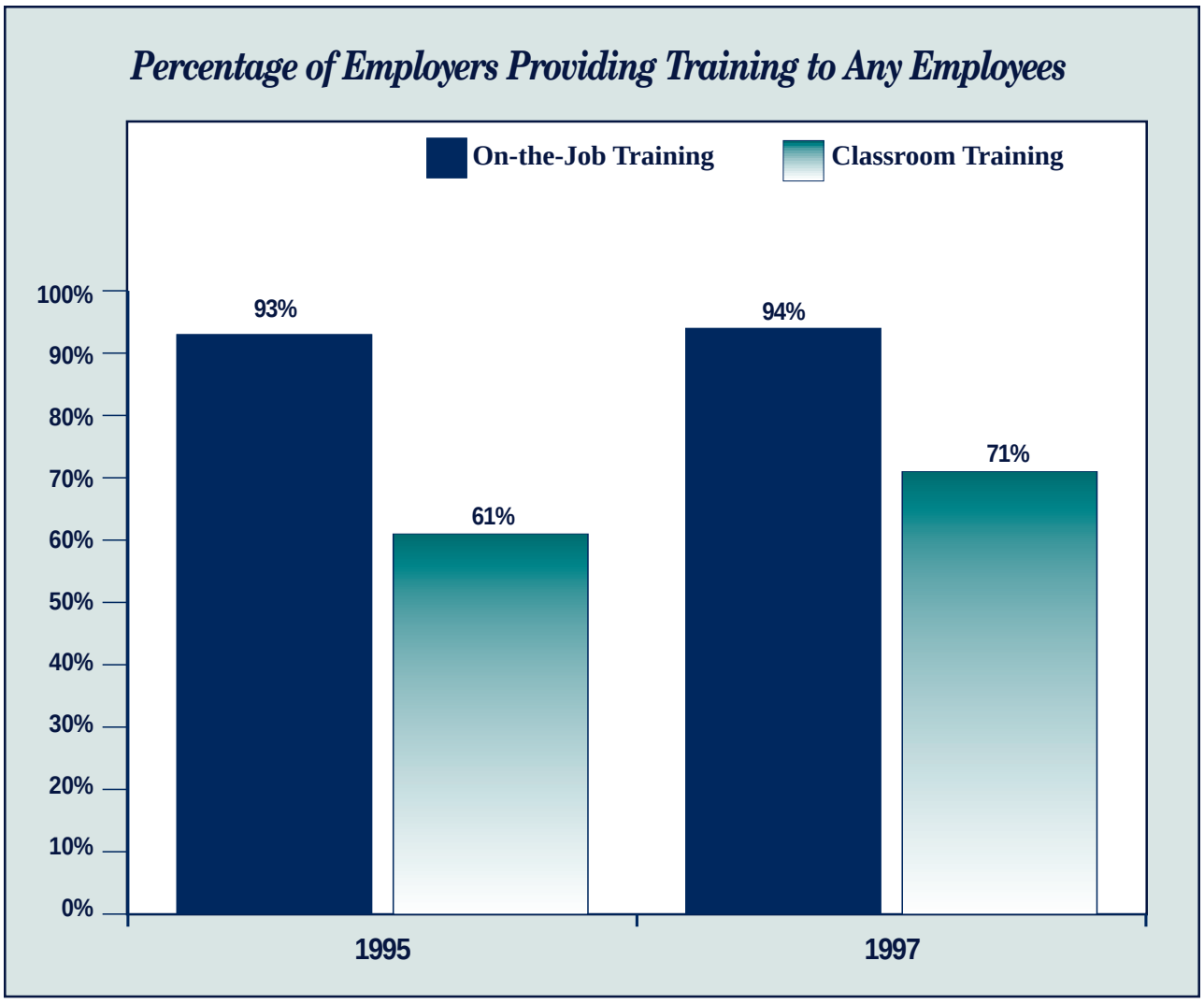
FIGURE 6



Almost all employers (94 percent) said they provided at least some on-the-job training to employees, and most said they provided or paid for some classroom training within the last 12 months for at least some of their employees. Seventy-one percent of employers said they provided at least 4 hours of classroom training in the last 12 months. This was a 16 percent increase from the percentage of employers who responded similarly in 1995. (See Figure 7.)

Employers tended to concentrate their training investments on improving employees' job-specific skills (e.g., training to upgrade employee skills, extend employee skills or to qualify workers for specific occupations). Among employers who provided on-the-job training, 96 percent said they provided training in job-specific skills. Sixty-three percent of employers said they provided employees with at least

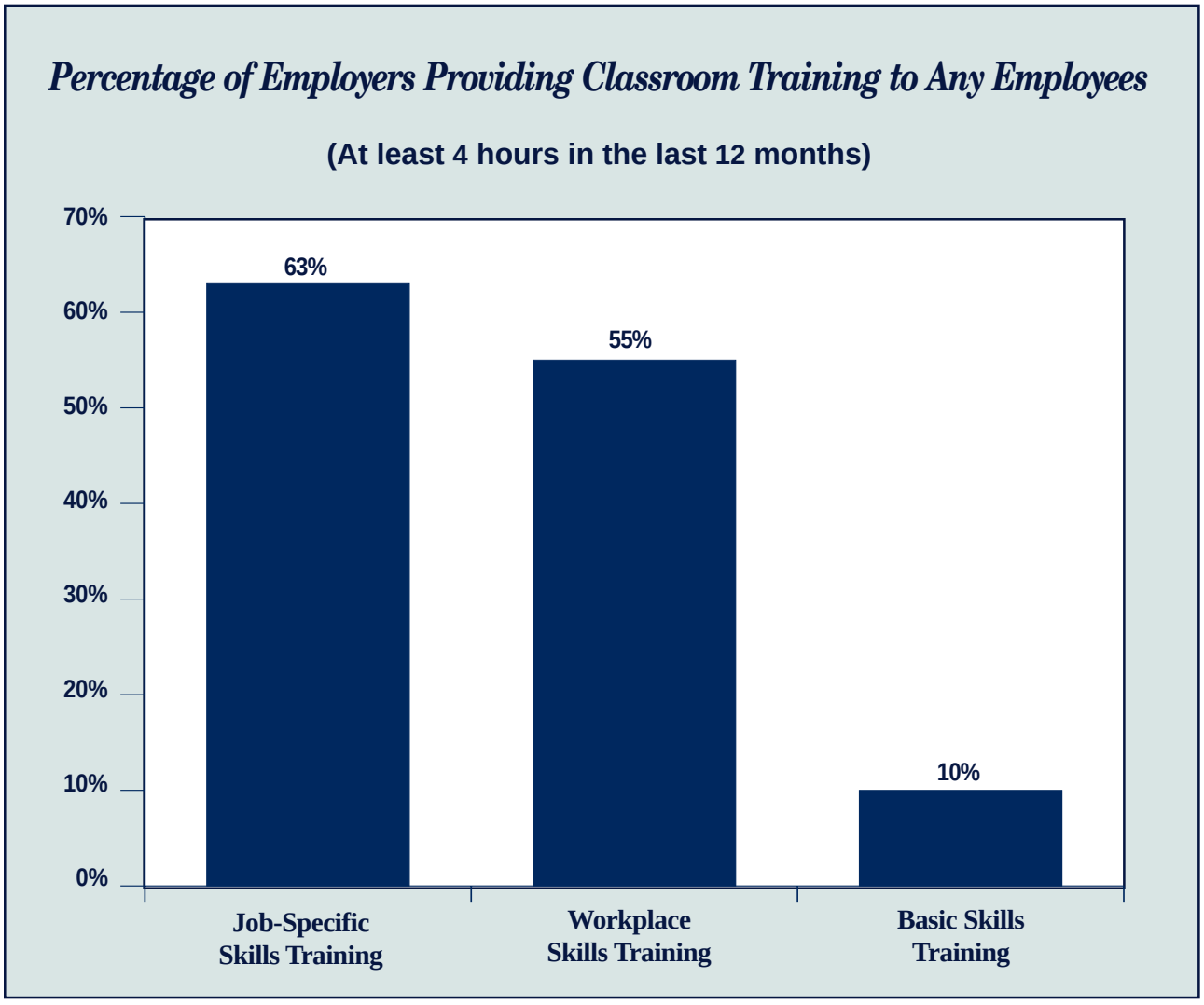
FIGURE 7



four hours of classroom training in job-specific skills. Employers also frequently provided employee training in workplace skills. Among employers who provided on-the-job training, 68 percent provided their employees with hands-on training in workplace skills, and 56 percent provided at least some classroom training in workplace skills.

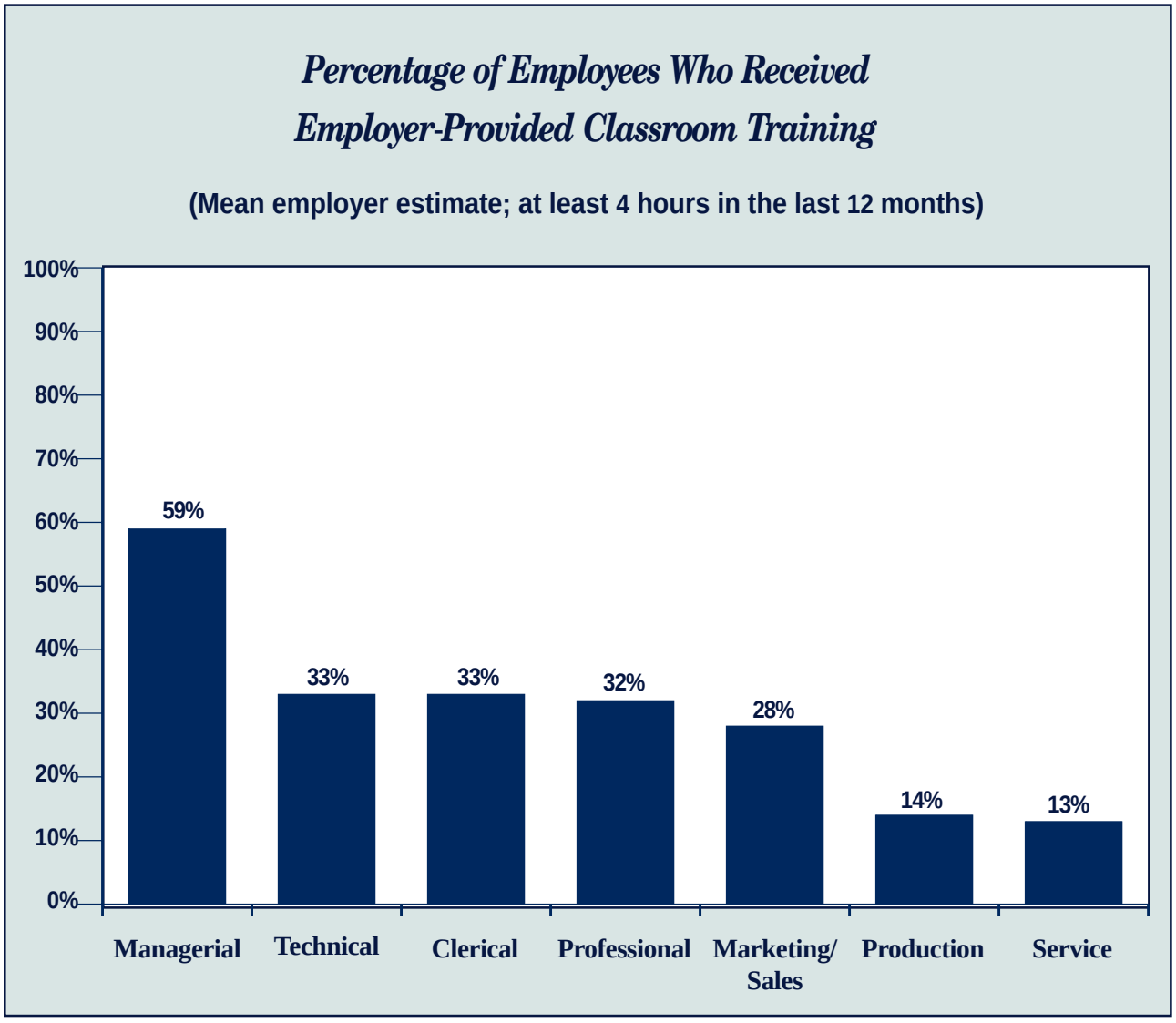
In contrast, employers reported they seldom provided basic skills instruction to their employees. Only 10 percent of employers indicated that they provided 4 hours of basic skills classroom instruction to any of their employees in the last 12 months. (See Figure 8.) This lack of employer-provided basic skills instruction was also found by the 1995 employer survey.

FIGURE 8



The 1997 employer survey found, as have previous state and national surveys, that employers are much more likely to provide training to managerial employees than to wage workers. The survey asked employers to classify into job types those employees who had received at least four hours of classroom training in the last four months. According to employer responses, 59 percent of managerial employees had received classroom training. In contrast, 33 percent of clerical and administrative support employees had received classroom training, and only 14 and 13 percent of production and service workers, respectively, had received classroom training from their employer. (See Figure 9.)

FIGURE 9



Youth

Secondary Workforce Training and Education

Continued employer demand for workers with only a high school education and employer difficulty in finding specific and general workplace skills in job applicants indicate the need for continued improvement in how secondary education prepares students for the workplace.

Labor Market Demand

No High School Diploma

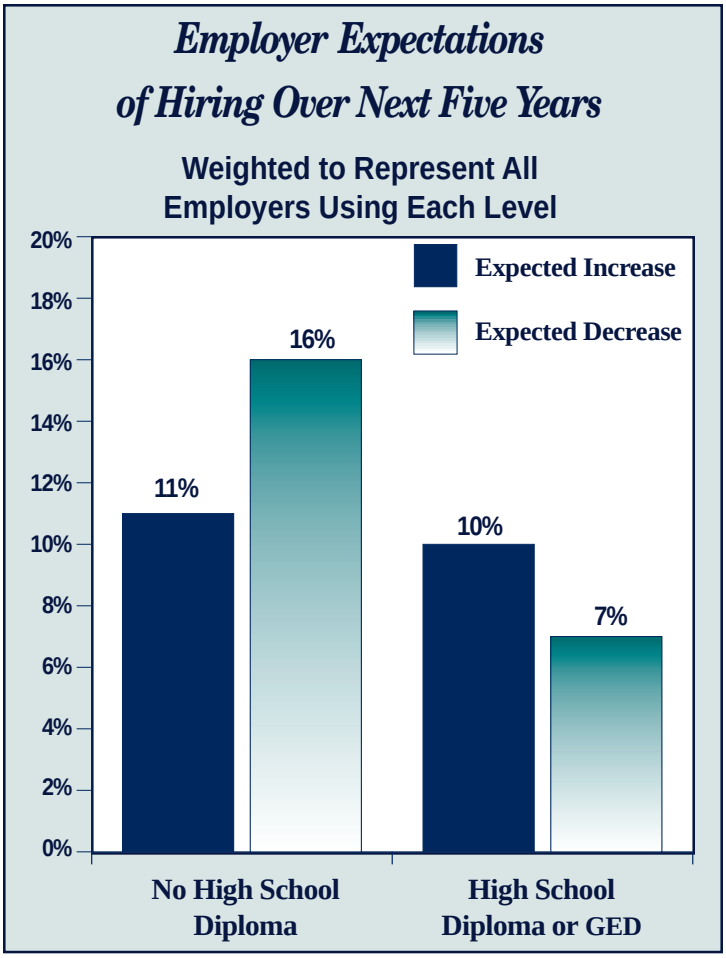
Over the next 5 years, 16 percent of the employers in Washington who hire such workers expect to decrease their hiring of those without a high school diploma or GED, far more than those expecting to increase their hiring of such workers. (See Figure 10.) Still, there remains a sizeable, although low-wage, labor market for workers without a high school education. About 21 percent of all job openings between now and 2006 will not require high school completion.[5] Such workers are hired by 46 percent of all employers.

High School Diploma

Labor market forecasts by the Employment Security Department predict continued stable demand between now and the year 2006 for workers with a high school education. Based on industry sector growth projections, hiring of workers with only a high school education will remain about the same percent of all hiring for jobs that require a secondary or postsecondary

[5] Preliminary data for *Occupational Outlook*, Employment Security Department.

FIGURE 10



education. Twenty-six percent of all openings between now and 2006 will require a high school diploma only. According to WTECB's survey of employers, more employers expect to hire workers with a high school diploma (85 percent) than expect to hire workers at any other educational level. Moreover, 10 percent of those employers expect to increase their hiring of such workers over the next 5 years.

Lower skill jobs are often accompanied by low wages, especially for young workers. Based on a sample of 1995–96 secondary vocational education completers from 53 school districts and 6 skills centers the third quarter after high school, the median wage was $6.51 per hour. In comparison, the median wage of 1995-96 community or technical college vocational completers was $10.35 per hour.[6] This $4 an hour difference suggests the substantial benefits that students can obtain by continuing and completing training at the postsecondary level.[7]

Given current patterns, close to one-half of the workforce will spend at least a year between leaving high school and entering postsecondary education. Approximately half of the individuals who enter will not complete a postsecondary program, and one in six workers will not receive any formal education beyond high school during their working career. This points to the importance of workforce preparation as part of secondary education.

The basic and vocational skills levels of high school graduates vary considerably. Most high school students who move directly into the workplace do so without receiving significant vocational education in secondary school. In 1996-97, only 10,378 or one-sixth of high school seniors completed a sequence of vocational courses.[8] Of those employers who attempted to hire high school graduates in the last 12 months, 22 percent reported at least some difficulty in finding qualified workers at that level.

Skill Deficits of High School Graduates

In order to gain an employer perspective on skill needs for entry-level jobs, we analyzed the survey responses of employers who hire mostly at the high school level.[9] Overall, almost all of these employers report some difficulty finding employees in one or more of the listed skill areas. Most reported high levels of difficulty in at least one skill area. (See Figure 11.)

Taking into consideration the frequency of employer response and the intensity of reported difficulty, there were five categories of skills that employers had above average difficulty finding in high school graduates. These skills fall into

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[6] *Workforce Training Results—1998*, WTECB.

[7] This difference is also attributable to the greater work experience and maturity of postsecondary completers.

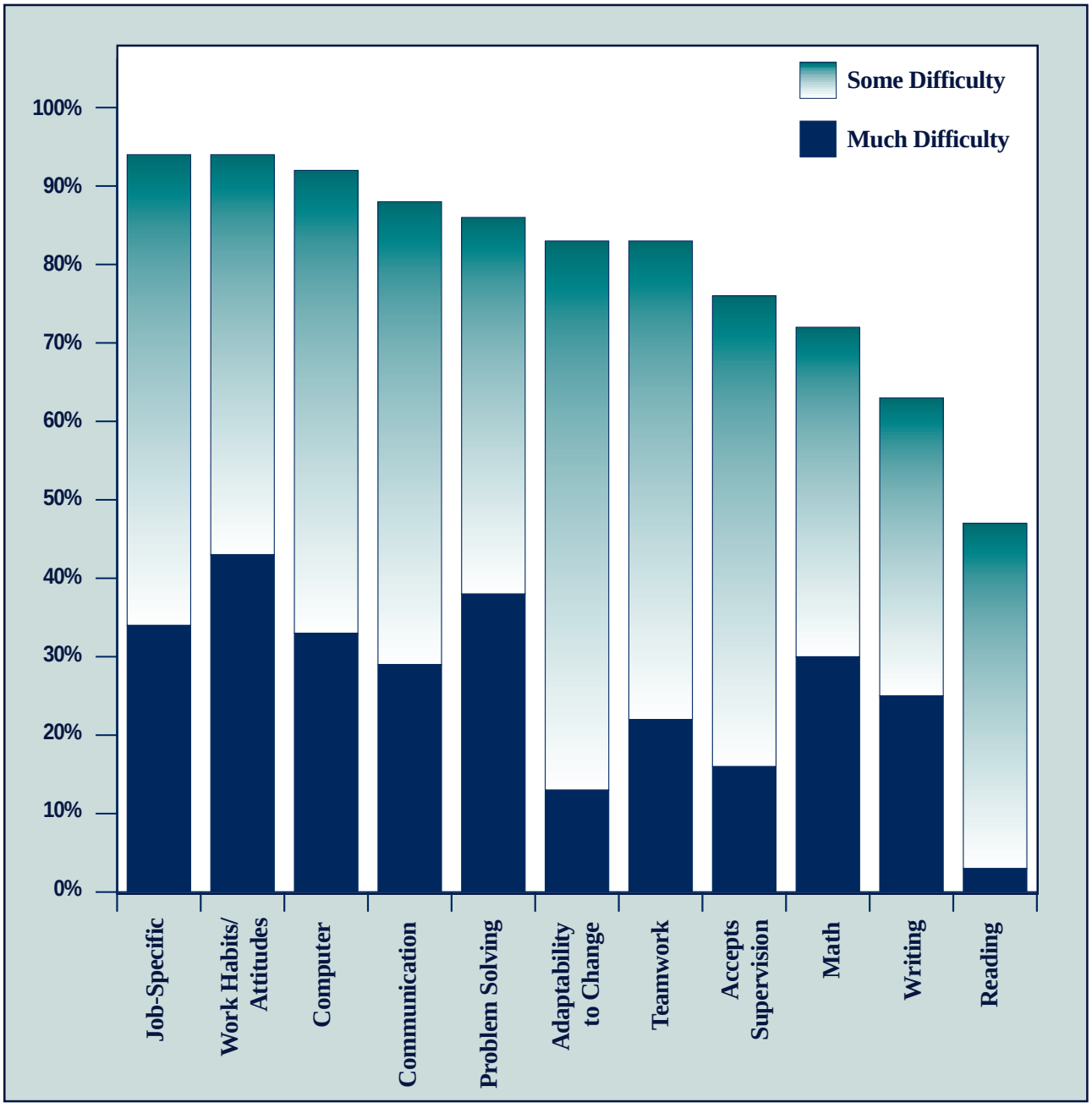
[8] *Workforce Training Results — 1998*, WTECB.

[9] Using survey responses from only those employers who classified 75 percent or more of their positions as requiring a high school diploma or GED, but no postsecondary education or training.

Difficulty in Finding Employee Skills for Employers Hiring Mostly at High School Level

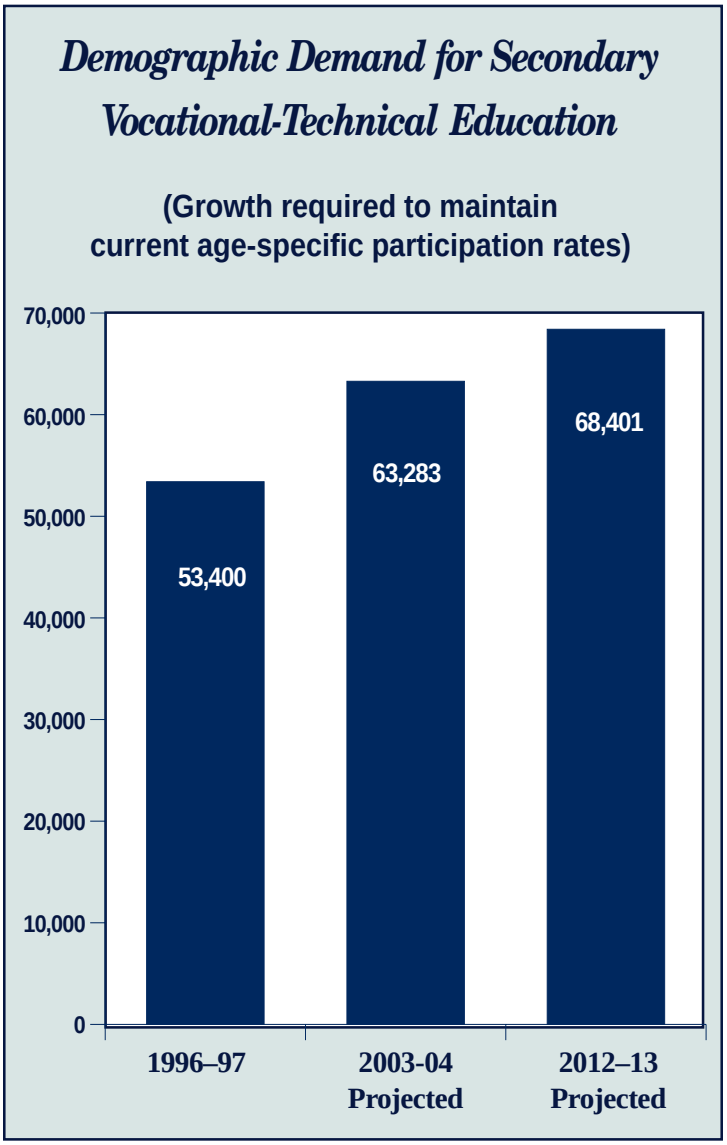
(Percentage of employers reporting difficulty finding a specific skill among the 73 percent of employers experiencing difficulty finding skilled applicants)

FIGURE 11



two groups: two work content-related (computer skills and occupation-specific skills) and three general workplace skills areas (work habits and attitudes, problem solving, and communication). Basic skills of reading, writing, and math were easier for employers to find in job applicants. Only math skills were near the average degree of difficulty for employers to find.

FIGURE 12



Demographic Growth

Population growth alone will increase demand for secondary vocational education. The number of 17- and 18-year-olds will rise 17 percent by the 2003-04 school year. At present participation rates, this will require an additional 9,880 FTEs in secondary vocational-technical education by 2003-04. (See Figure 12.) (Participation rates refers to the percentage of the age cohort who are enrolled in a program.) Beyond 2003-04, the secondary student population will continue to grow, but more slowly, with a further 9 percent increase by 2012-2013. This will require an additional 5,120 vocational FTEs by 2012-2013 at present participation rates.

Out-of-School Programs for Youth

JTPA Titles II-B and II-C target youth with barriers to success, such as basic skills deficiency or local economic distress.

Federal Reductions

JTPA Title II-B provides a mixture of work experience and academic instruction to about 5,000 youth each summer while they are out of school.

JTPA Title II-C provides year-round services to youth who have dropped out of high school or are at risk of dropping out. It serves about 1,400 youth per year, most of whom are still enrolled in high school or alternative high school programs. Federal funding for this program has been substantially reduced in recent years.

Adults

Preparatory Training, Skills Upgrading, and Dislocated Worker Retraining

There is strong evidence that the state training system is not training sufficient numbers of workers in vocational skills that require postsecondary training but not a baccalaureate degree.

Overview of Training Supply

Adults obtain nonbaccalaureate training through a variety of settings.[10] Most often they receive training in community and technical colleges, private career schools, apprenticeship programs, JTPA Title III for Dislocated Workers, the Job Skills Program (JSP), and training provided by employers to current employees. (Adults with barriers to success, such as low socioeconomic status qualify for additional training programs, which are discussed in another section.)

Community and technical colleges are the single largest public supplier of adult training in the state. Though community and technical colleges serve purposes other than vocational training (such as providing the first two years of baccalaureate education and basic skills instruction), this section concentrates on college vocational programs and the role of academic associate degrees programs in providing workplace credentials.[11]

During 1996-97, there were 144,857 students in the colleges for job preparation or skill upgrading.

Private career schools also are responsible for training a significant number of students in helping to meet the state's workforce training needs. These career schools are private businesses that provide occupational training to students. They enroll approximately 35,000 students per year statewide and grant approximately 600 degrees, primarily associate of arts degrees, each year, as well as over 5,000 vocational certificates.

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[10] The role of four-year colleges and universities in providing workforce training that does not result in a degree is not well measured. However, there is no doubt that a significant number of individuals receive important workforce training or retraining at four-year institutions without receiving a degree, some without ever intending to receive a degree, and others by continuing their education after having received a degree.

[11] A substantial proportion of the students who receive academic associate of arts degrees move directly into the workplace without transferring to a four-year university. Employer survey responses indicate that employers recognize an academic associate degree as a distinct workplace credential and hire a considerable number of workers at this educational level.

Apprenticeship in Washington State is governed by the Washington State Apprenticeship and Training Council and administered by the Department of Labor and Industries. Apprenticeship combines classroom studies with extensive on-the-job training under the supervision of a journey-level craft person or trade professional. Apprentices receive wages, health, pension, and other benefits while learning trade skills. There are approximately 11,500 registered apprentices each year.[12]

One group of adults in need of training are those dislocated from their current jobs by economic change. This is most clearly seen in events such as major plant closures, but also occurs in much less obvious small scale layoffs and restructurings. Targeted training programs exist for many of these workers. The largest are the federal JTPA Title III program (7,800 enrollees) and the state Worker Retraining Program (12,000 participants). These programs also provide other services beyond occupational training, such as job search and child care assistance. Much, but not all, of the occupational training provided to dislocated workers through JTPA Title III consists of community and technical college courses.

Customized training for specific employers and job openings is funded through JSP, which is administered by WTECB. JSP provided training for 2,531 workers during the last biennium with expenditures of $996,048 in state grants. Employers match state expenditures at a rate of at least dollar-for-dollar. The program supports training for new workers and upgrading or retraining for current workers. Training is most often provided by a community or technical college.

In general, adults who already have a job most often receive employer-provided training, not training through a public program. Indeed, employers provide a large amount of training to improve the skills of their incumbent workers. According to WTECB's 1997 survey of employers, over 94 percent of Washington employers provide on-the-job training to some of their employees each year. The proportion who provide at least 4 hours of classroom training to at least some of their employees is over 71 percent, an increase over 1995 WTECB employer responses.

Demand for Training

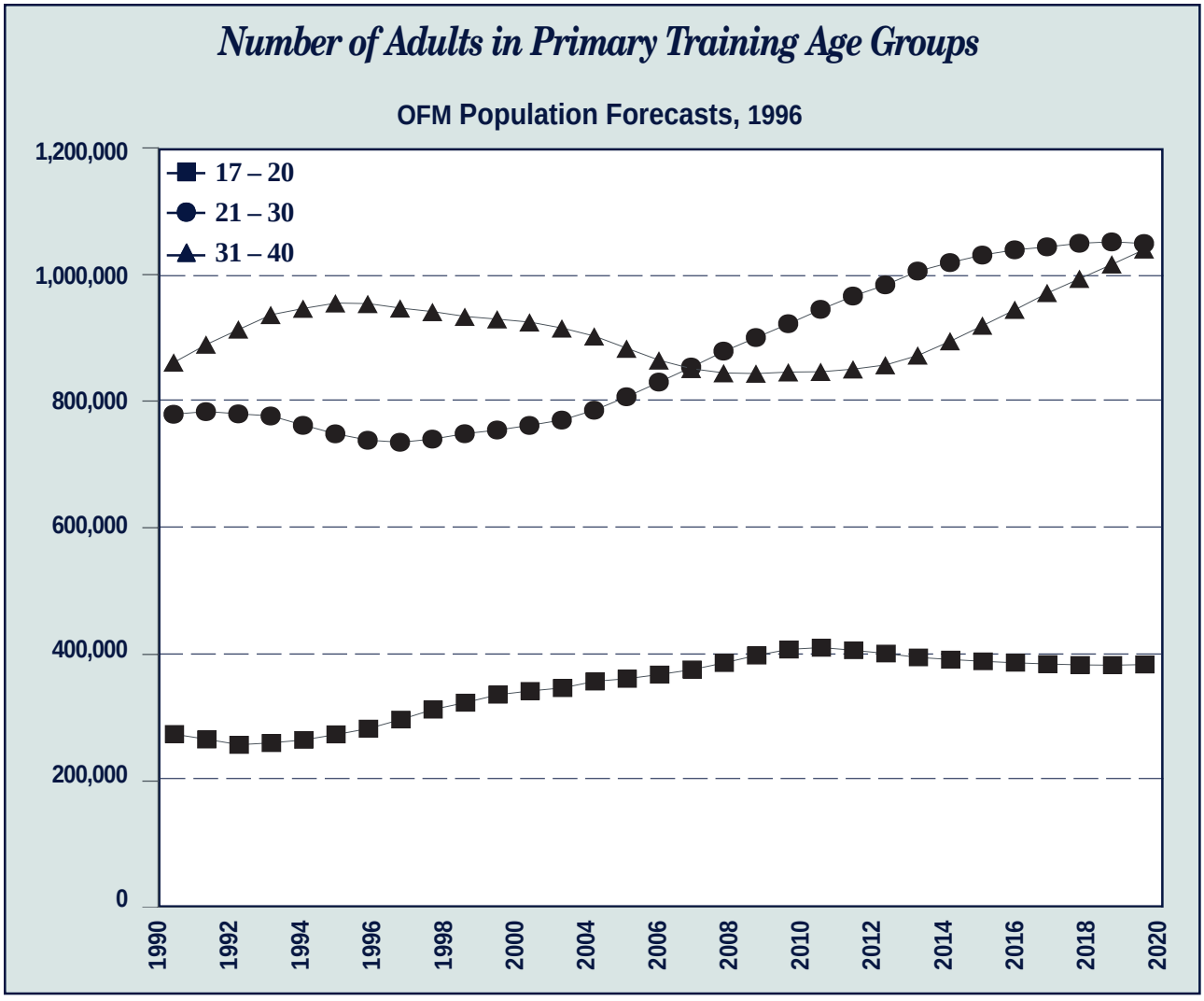
There is substantial evidence that employer demand for workers who have completed a postsecondary vocational program is greater than the current supply of these workers. Moreover, not only is the workforce growing in size, but the skill requirements for workers within occupations and industries are increasing. In addition, if predictions of increasing career changes hold true, retraining for career transitions will add significantly to the amount of training needed per worker.

[12] The approaching retirement of a large cohort of journey-level baby boomers may lead to increased shortages among some skilled trades. This issue is subject of at least one ongoing study and needs further analysis.

Demographic Growth

In analyzing demographic growth, it is important to consider not only the size of the adult population, but its age distribution. Although young adults in their early twenties are more likely than older adults to participate in post-secondary vocational training, participation rates remain high, well above 30 years of age, such that the average age of training participants is in the late 20s to early 30s, with significantly older participants in dislocated worker programs. Projections show that over the next several years, the state's population of 17- to 20-year-olds and 21- to 30-year-olds (the "baby boom echo") will increase rapidly, expanding at a high rate for a period of approximately 10 years before leveling off. As a result, the state's colleges can expect to see a substantial increase in enrollment demand. (See Figure 13.)

FIGURE 13

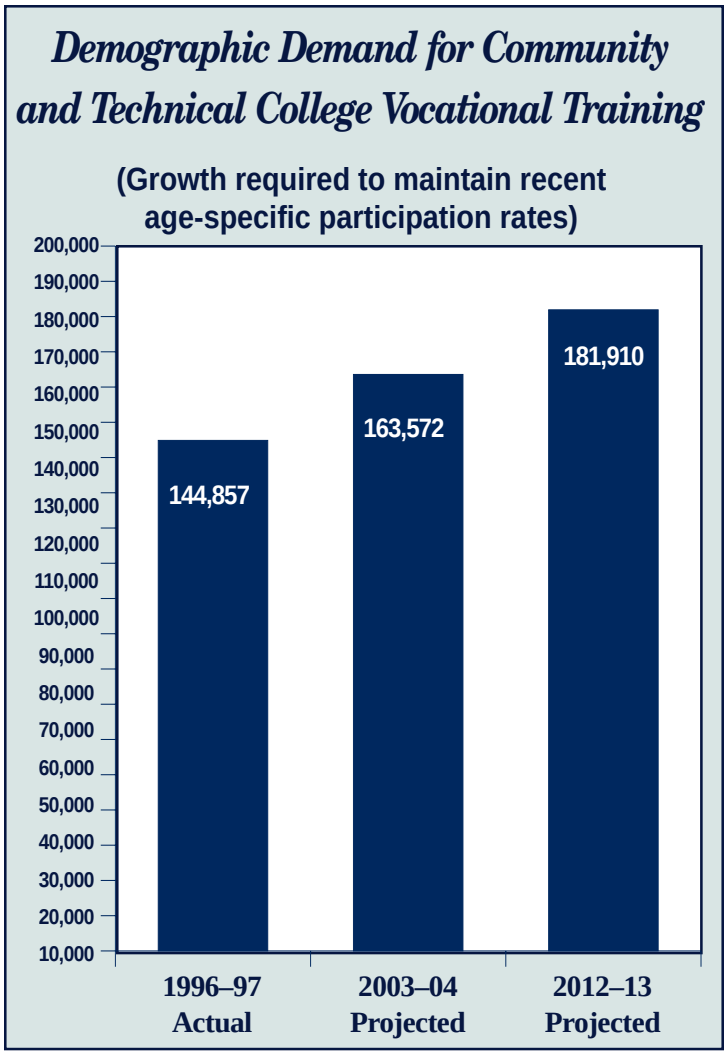


Simply maintaining the current percentage of adults in each age group who enroll in the community and technical vocational training will require substantial enrollment increases. At recent participation rates in vocational training, community and technical college enrollments would have to rise from a head count of 144,857 in 1996-97 to 163,572 in 2003-04 and to 181,910 in 2012-13. (See Figure 14.) Staffing and funding at community and technical colleges is measured in terms of how many full-time students would be supported by those resources, known as Full Time Equivalents (FTEs).[13] In terms of budget and staffing, maintaining recent participation rates by age group would require an additional 8,000 FTEs by 2003-04 and a further 7,000 FTEs by 2012-13.

These projections of community and technical college enrollments are consistent with the enrollment goals established by the Higher Education Coordinating Board (HECB). HECB recommends increasing what is termed "lower division enrollments," which include community and technical college vocational enrollments, at a level that maintains current participation rates for adult age groups.[14]

For private career schools to maintain current age-specific participation rates, enrollment will have to increase by 7.1 percent by 2003-04 and a further 15 percent by 2012-13. Similarly, for apprenticeship programs, maintaining current participation rates by age group will require growth by about 8.9 percent by the year 2003-04, raising the numbers in training from 11,500 to 12,500.

FIGURE 14



[13] Measuring enrollment in FTEs is particularly important for programs where many students attend part-time. An FTE is the amount of courses that a student attending full-time requires. For example, two halftime students are counted as one FTE.

[14] WTECB's approach is somewhat different from the annual forecast produced by OFM for use in calculating the HECB forecast. WTECB's projections include *all* vocational enrollment, not just the 91 percent of enrollment partially funded by the state. WTECB uses this approach in order to calculate the total supply of vocational training. The participation rate projections in this report have been developed in cooperation with OFM and are compatible with its participation rate projections.

Labor Market Demand

In Washington State, the economy's demand for workers with postsecondary vocational training exceeds the supply being produced by the state's training providers. This gap is evident in data on the projected number of job openings and in employer survey responses.

Economic forecasts indicate substantial and growing demand for workers with vocational credentials. The Washington State Employment Security Department (ESD) projects the educational level associated with job openings expected in the future. To do this, ESD plots employment and net job openings by occupation based on forecast growth for each industrial sector.[15] ESD then identifies the educational level expected of employees filling these openings by using the Bureau of Labor Statistics (BLS) skill level classifications. (See Figure 15.) The BLS scale identifies four job levels by the educational level they require:

Level 1 Requiring a bachelor, professional, or graduate degree.

Level 2 Requiring two or three years of postsecondary education, training, or specific experience, or a two- to four-year apprenticeship.

Level 3 High school diploma preferred and up to two years on-the-job training, specific work experiences, or training.

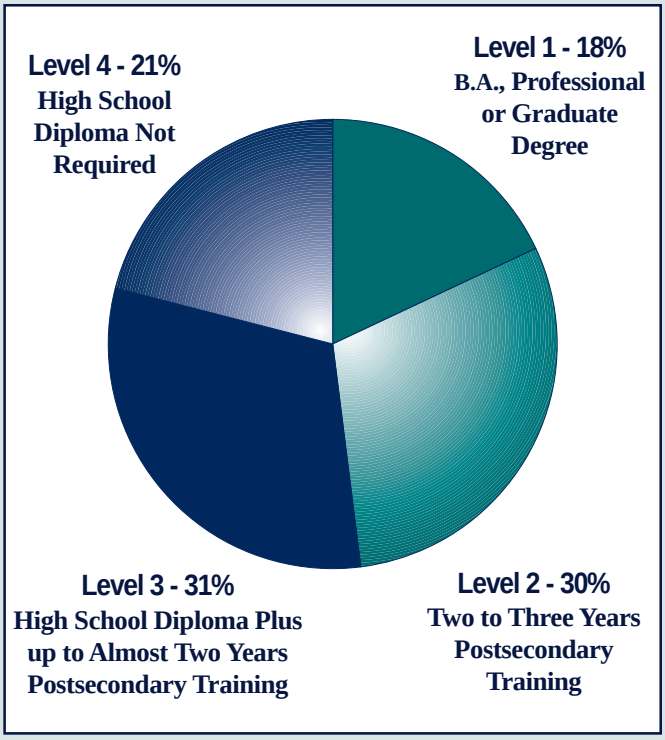
Level 4 Less than high school education and workplace training.

While the analysis that follows focuses on BLS category 2 job openings, many of the jobs in BLS category 3 require significant postsecondary training, such as much of the training provided in private career schools and community and technical college vocational certificate programs.

[15] The net job openings forecast adjusts for normal changing of jobs within an occupation and counts only openings that result from growth in the number of jobs or from separations, such as retirement, in which a worker leaves a particular occupational category.

FIGURE 15

Distribution of Net Job Openings by Bureau of Labor Statistics Skill Level Over the Next Five Years



Employment Security forecasts that there will be, on average, 38,000 net job openings per year over the next 5 years in Level 2 jobs,[16] the BLS level that most closely corresponds to a vocational associate degree.[17] This forecast of job openings is a *substantial increase* over the 28,000 annual net jobs forecasted two years ago. This is primarily the result of a continued expanding economy. A major downturn in the economy would reduce the forecasted levels of demand.

When we compare these 38,000 expected job openings per year to the current educational supply, we can quickly see that the supply falls substantially short of demand. Community and technical colleges and accredited private career schools graduate about 19,000 students with associate degrees per year. More than 6,000 of these individuals transfer to 4-year institutions, and approximately 1,000 already had credentials at BLS Level 2 and, thus, do not count in the "net increase." This results in a net output of approximately 11,400 graduates with terminal associate degrees per year. State apprenticeship programs graduated 1,326 individuals in 1996-97. Another 6,951 individuals received vocational certificates from community and technical colleges. (Many of the individuals receiving vocational certificates do not meet the BLS Level 2 definition; they are counted here in order to be conservative in estimating the gap between supply and demand.) Altogether, there is an in-state supply of approximately 19,340 graduates with training at the BLS Level 2 per year, compared to 38,000 net job openings at this educational level. (See Figure 16.)

In addition to the in-state supply of workers with vocational credentials, migration has continued to enlarge the state's population and workforce each year. During 1985-1990, the net effect of migration to and from other states averaged about 3,700 more individuals with vocational associates degrees per year. Migration levels today are probably quite similar.

Associates degrees public and private	18,985
Already BLS Level 2 (therefore not "additions")	-982
Transfer to 4-year institution	-6,580
Net new associates degrees	**11,423**
Apprenticeship program completions	1,326
Community and technical college vocational certificates	6,591
Total BLS Level 2 credentials produced in state	**19,340**
Added through net migration (1990 Census estimate)	3,700
Annual BLS Level 2 additions to workforce	**23,040**

[16] The Employment Security Department only forecasts five-year averages for net openings. It is probable that openings will be somewhat below the five-year average in some years and somewhat higher in others. Precise forecasts by year are almost always undone by the ups and downs of the business cycle.

[17] Despite the imprecision of the BLS scale and its inability to compensate for increasing training requirements, a comparison of BLS Level 2 demand to current educational output is instructive.

Annual Labor Market Supply and Demand for Postsecondary Vocational Credentials

FIGURE 16

While net migration adds to the supply of workers with vocational credentials, the overall population of workers who move to Washington State actually has a lower percentage of individuals with associate degrees than does the resident state population. The opposite is true with respect to individuals with graduate and bachelor degrees. According to Census data, the net effect of migration to and from other states has been to increase the proportion of graduate and baccalaureate workers in the state.[18] Thus, while there is some demonstrated potential for addressing shortages of graduate- and baccalaureate-level workers through in-migration, experience demonstrates more limited ability to import workers at the associate level. We should not anticipate solving the shortage of workers with vocational credentials through in-migration. (See Figure 17.)

[18] Academic associate degree workers show no proportional inflow. Vocational certificate workers are not identifiable in Census data.

FIGURE 17

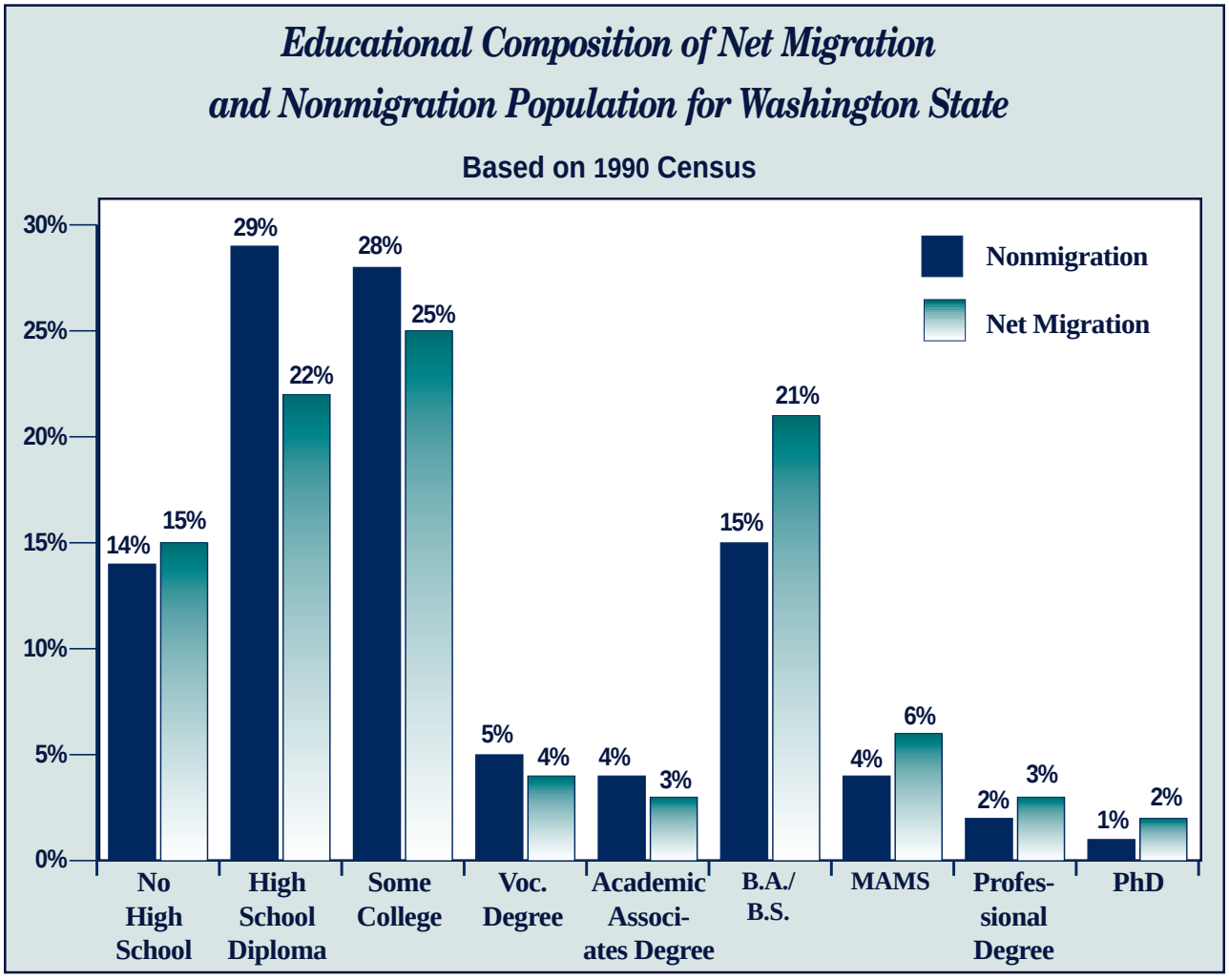
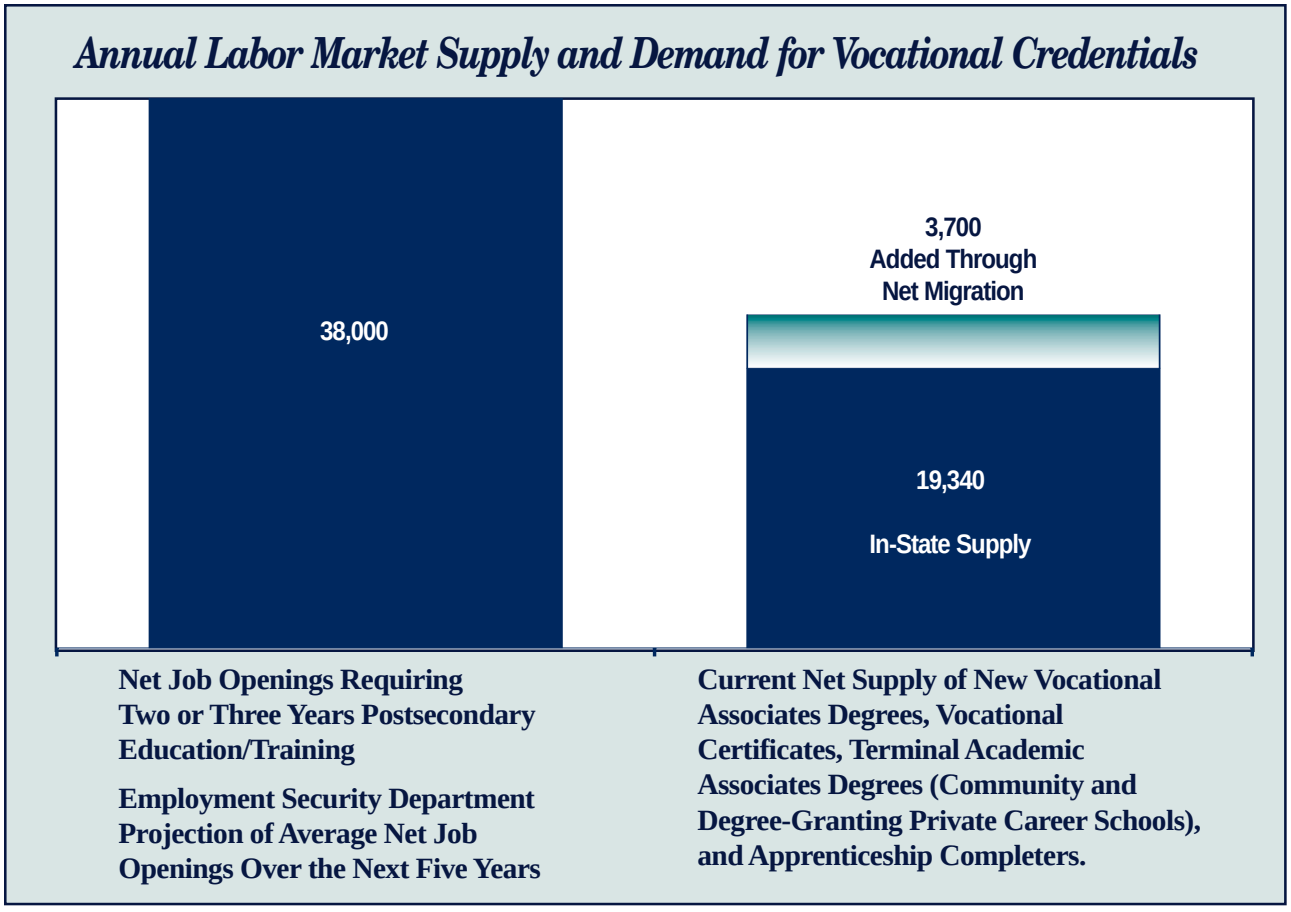


Figure 18 shows the total annual supply of workers with vocational credentials compared to the number of annual net job openings at this educational level. Adding net migration to the in-state supply produces an estimated annual supply of 23,040 new workers with a vocational credential, compared to 38,000 net job openings per year. The gap, therefore, is approximately 15,000 job openings requiring vocational credentials per year.[19]

As mentioned above, the estimate of 38,000 net total openings per year reflects the current economic boom in the I-5 corridor. While a downturn in the economy could reduce the number of job openings below expectations, there would likely remain a sizeable gap between demand and the supply of workers with postsecondary vocational credentials. During slower economic times 2 years ago, demand was still estimated at 28,000 job openings per year.

[19] There are further positive and negative adjustments that could be made in this comparison. Many Level 2 jobs are filled by workers with BAs or by workers with fewer years education but extensive on-the-job training. On the other hand, 10-15 percent of adults in all education categories are out of the workforce at any given time, and a significant number of vocational-credentialed workers are employed in occupations outside BLS Level 2.

FIGURE 18



If this analysis of the gap between supply and demand is correct, we would expect employers to have difficulty in finding job applicants with postsecondary vocational credentials, and we would expect this difficulty has been increasing. Moreover, if the economy remains strong and the supply of training does not increase, this difficulty will be still greater in the future.

WTECB's surveys of employers provide such evidence. In our 1995 survey, 45 percent of all employers reported difficulty finding qualified workers with a postsecondary vocational credential in the last 12 months. In 1997, 55 percent of all Washington employers reported such difficulty. The 1997 survey also found that about 38 percent of employers who hire workers with a vocational credential expect their need for such workers to increase over the next 5 years.

Maintaining age-specific participation rates alone will not close the gap. Assuming that community and technical college workforce training keeps pace with demographic growth as discussed earlier, another 1,900 individuals with vocational degrees and certificates would be added annually to the workforce by the year 2003-04. Another 800 individuals with terminal academic associates degrees would also be added. This would still leave an estimated gap between the 38,000 net annual job openings and an annual supply of 25,740 workers with new vocational credentials, 22,040 of whom would have been trained in the state.

Strategies to Meet the Gaps

Growth

Increasing Community and Technical College Vocational Training

In order to meet labor market demand for training, community and technical colleges must expand vocational training beyond current participation rates. As discussed above, maintaining current participation rates at the community and technical colleges will increase the number of vocationally credentialed graduates (including terminal academic associates) in the 2003-04 school year by about 2,700 graduates. However, this growth only keeps pace with an expanding population. It will not close the gap, which this report estimates at up to 15,000 vocational credentials per year.

The recommendation section of this report includes a specific recommendation to expand the number of vocational student FTEs at the community and technical colleges beyond current participation rates. In order to explain the basis for the recommendation, it is necessary to review WTECB's recommendations from two years ago and recent student enrollments at the colleges. Although, it should be noted that the last year for which we have data, 1996–97, was too soon for enrollments to have responded to WTECB's 1996 recommendation.

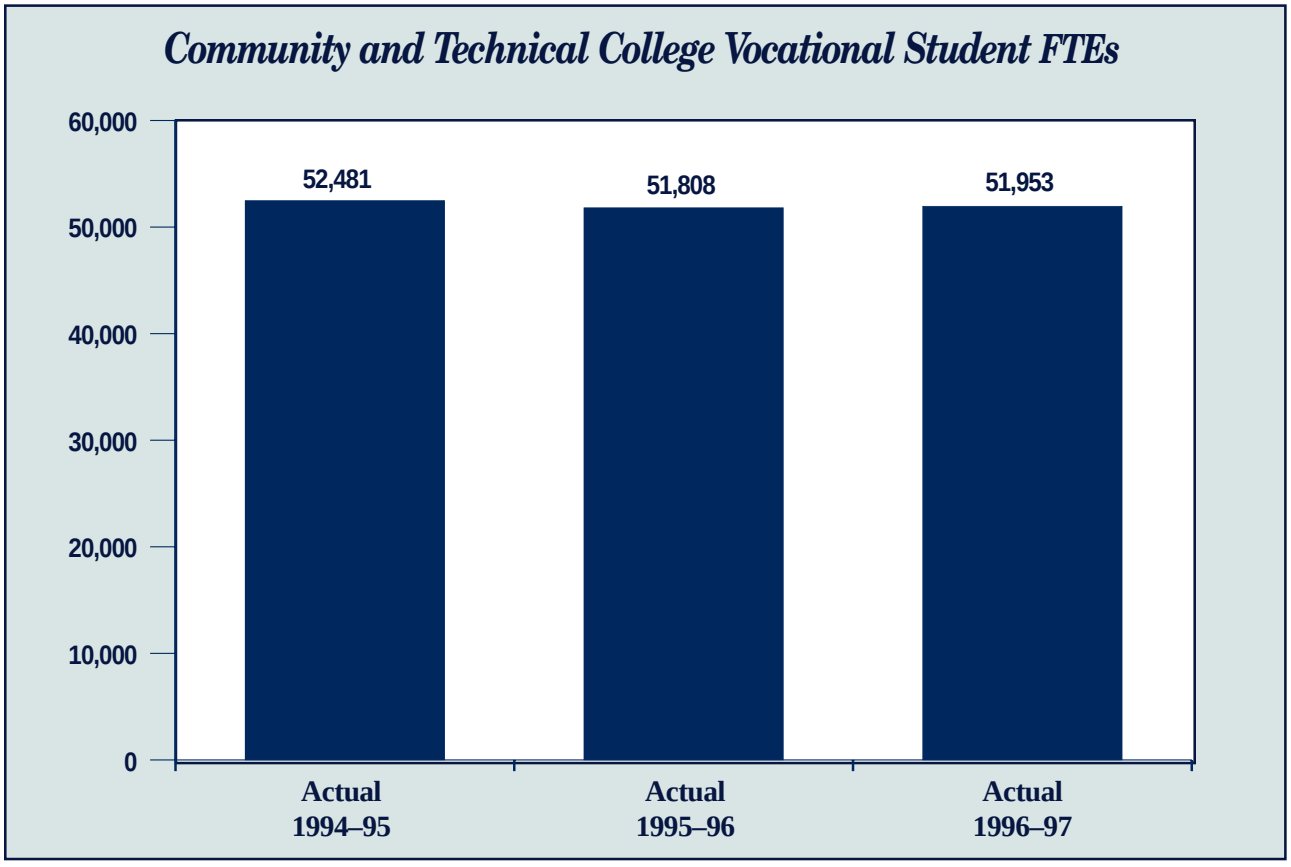
Closing the gap cannot be accomplished all at once. WTECB recommended two years ago that for adjustments to be manageable, both in terms of funding and administration, it makes sense to

close the gap incrementally at a reasonable rate, and therefore recommended 2 percent per year beyond maintaining current participation rates for a total increase of 3.3 percent per year. Currently, approximately 11 out of every 200 working-age adults participates in community and technical college vocational training every year. This expansion would have raised that rate by less than 2 persons, from 11 to less than 13 out of every 200 working-age adults in training each year by the 2003-04 school year.

Unfortunately, community and technical college enrollments in vocational training programs have not grown in recent years. Recent enrollment levels in community and technical college vocational programs do not appear to be responding to labor market demand, despite additional funding for community and technical colleges.

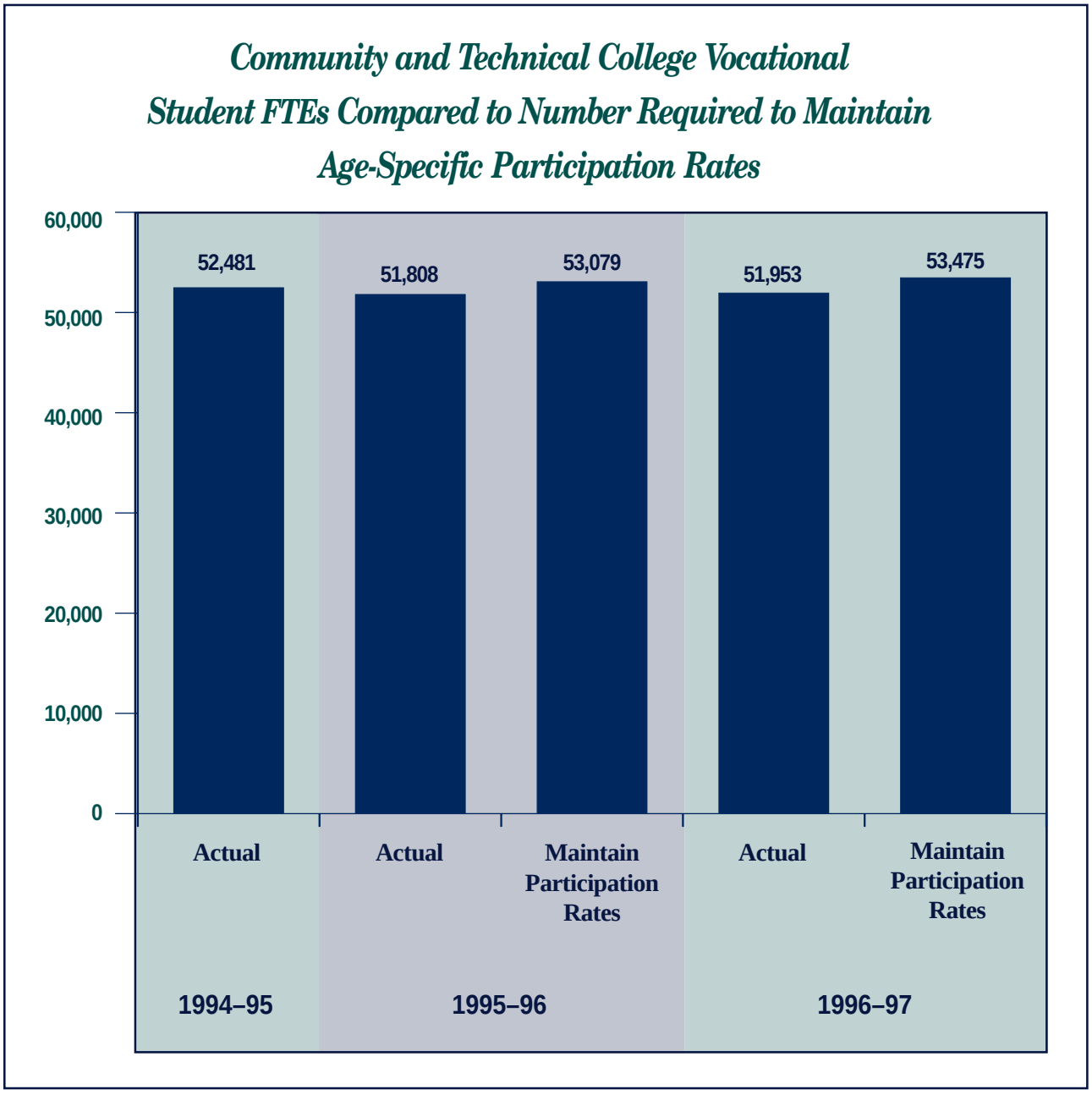
As shown in Figure 19, in 1994-95 there were 52,481 college vocational student FTEs. During the 1995-96 school year, that figure declined to 51,808 student FTEs. In 1996-97, the number increased to 51,953, but was still lower than the number of vocational student FTEs two years earlier.

FIGURE 19



When we compare the vocational enrollments against the number required to stay even with population growth, the picture looks worse. As shown in Figure 20, in order to maintain age-specific participation rates, in 1996-97 the community and technical college system would have enrolled 53,475 students on an FTE basis. Since the last "Gap Analysis" two years ago, actual enrollments fell 1,522 student FTEs short of staying even with population growth.

FIGURE 20

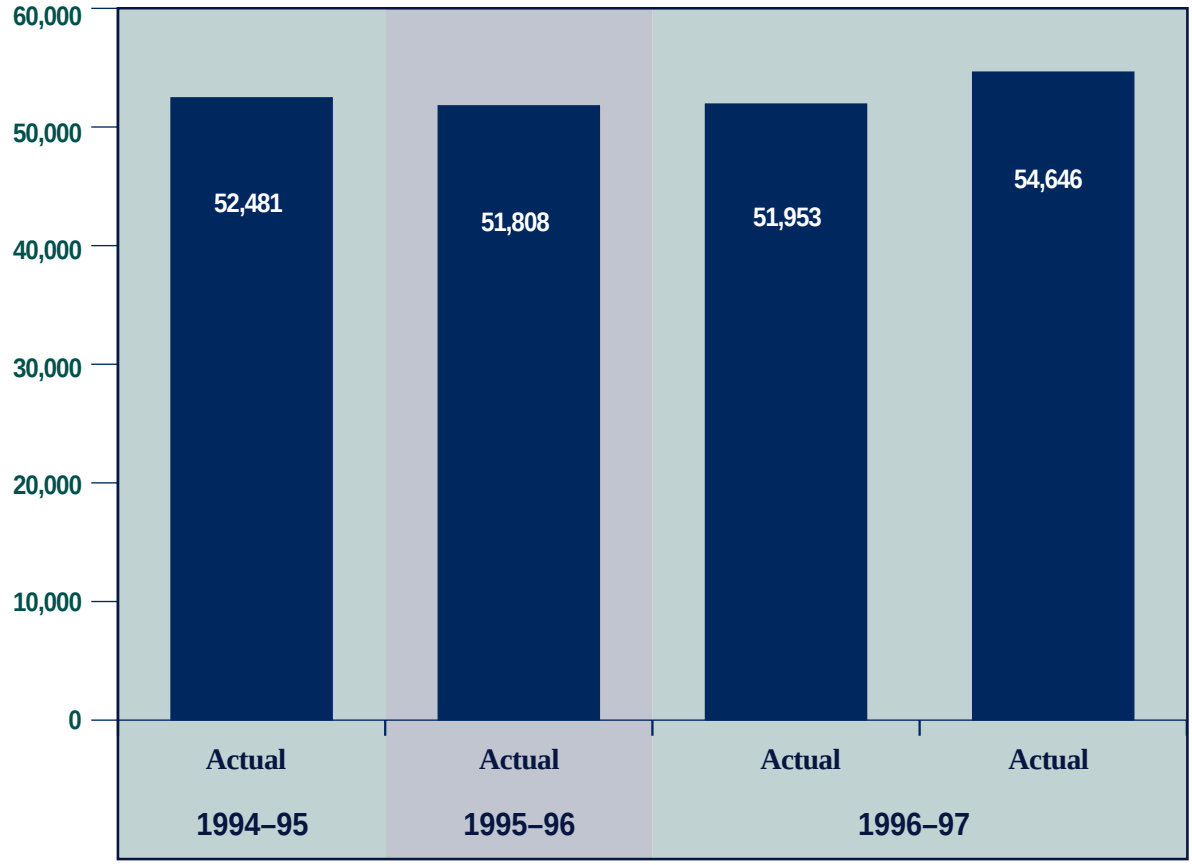


Vocational enrollments at the colleges fell far short of meeting WTECB's 1996 goal of gradually closing the gap with labor market demand by increasing enrollments by 3.3 percent per year. Figure 21 shows that in order to meet WTECB's goal, college vocational enrollments would have been 54,646 FTEs in 1996-97. Actual enrollments fell 2,693 student FTEs short of WTECB's goal.

In summary, since the 1994-95 school year, the gap in postsecondary vocational enrollments has become worse, not better. Instead of increasing by 2,165 FTEs as recommend by WTECB, student enrollments have fallen by 528 FTEs.

FIGURE 21

Community and Technical College Vocational Student FTEs Compared to WTECB's 1996 Goal for Reducing the Gaps in Meeting Labor Market Demand



In order to get vocational enrollments back on track with WTECB's original recommendation to reduce the gap with labor market demand, but still increase enrollments at a manageable rate, WTECB recommends that enrollments increase by 6.8 percent per year for 5 years beginning with the 1999-2000 school year. (See Figure 22.) The beginning date is chosen to allow time for the college system and the state budgetary process to respond.

A 6.8 percent increase per year for 5 years would increase the total number of vocational student FTEs by 17,600. (See Figure 23.) If the number of vocational FTEs does not begin increasing until the 1999-2000 school year, this would require an average increase of 3,520 FTEs per year over the 5-year period ending with 2003-04. This growth would result in approximately 2,400 additional vocational degrees and 2,600 additional vocational certificates, reducing *but not closing* the gap with labor market demand. Corresponding financial aid would be required. (See Financial Aid, Appendix A.) Further expansion after 2003-04 would also likely be needed.

Demand for Upgrading the Skills of the Current Workforce

In addition to new workers with vocational skills and degrees, employers also need to provide continuing education and training for their current workers so that skills stay up to date and competitive.[20] Similarly, workers wish to upgrade their skills to qualify for higher level jobs.

Workforce skill upgrading for any given worker is likely to consist of:

- Repeated instances of formal training, consisting of a program or course of training (inelegantly termed an "episode" in this report), often in a classroom-type setting.
- More frequent employer-provided formal on-the-job training.
- Continual informal learning on the job.

Most of the available data is about the first of these three types of skill upgrading.

Employers surveyed were asked to estimate the proportion of their workers in need of further classroom training to increase productivity, such as might be obtained at a local community college or vocational school. Based on employer response, approximately 900,000 persons or 36 percent of the current workforce needs additional classroom training.[21]

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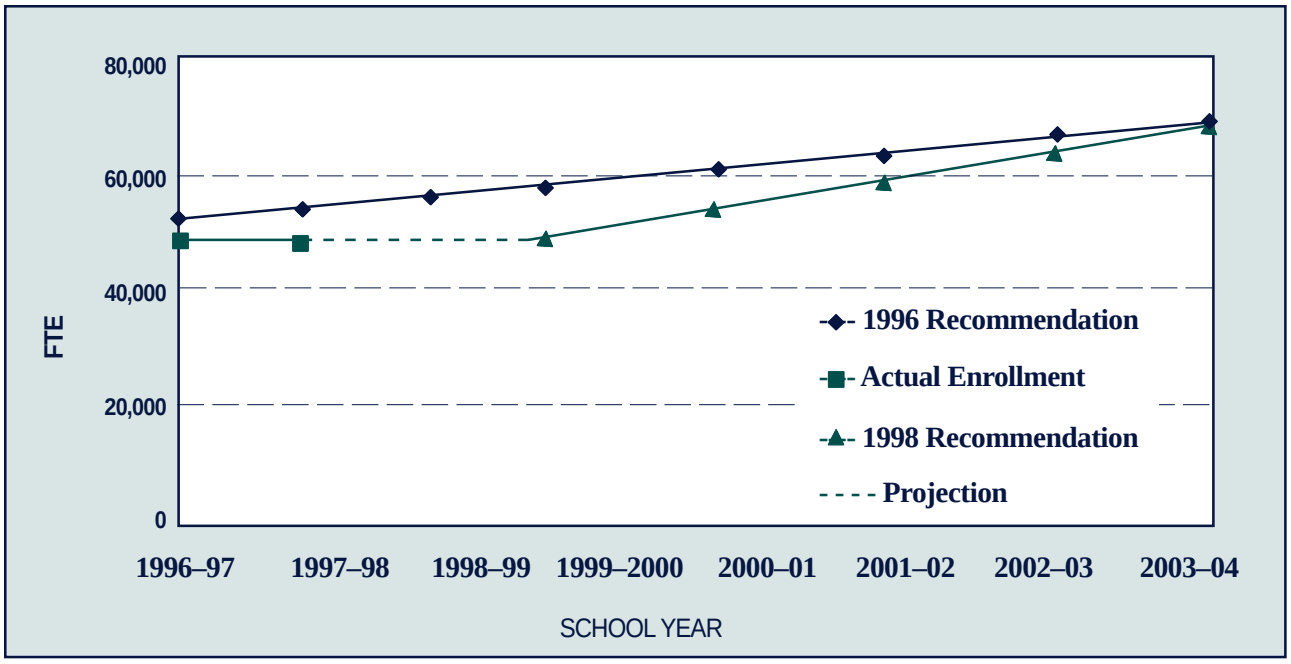
[20] The analysis of training need in this report focuses on classroom training, in part because of the substantial public sector role in this area. The employer survey questions used in estimating demand clearly referred to enrollment, courses, and the type of training provided by community and technical colleges. Therefore, the demand and supply for employer-provided, nonclassroom training is properly excluded from analyses based on those surveys.

[21] The survey did not cover either workers who are employed by firms with fewer than five employees or federal government workers. The survey also did not include individuals who are unemployed or temporarily out of the workforce. Workforce turnover, including migration and replacement of retirees with younger workers, will also add to the number of workers needing skills upgrading.

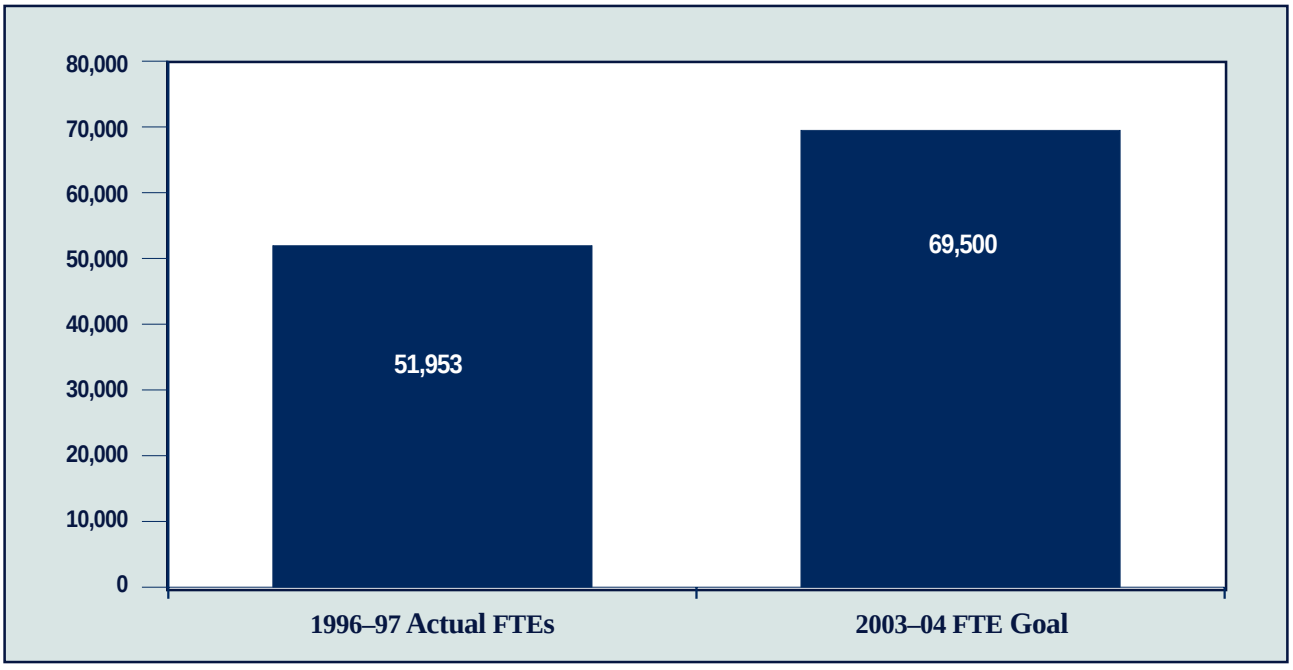
Recommendations for Community and Technical College Vocational Enrollments

FIGURE 22



WTECB Goal for Community and Technical College Vocational Training Student FTEs

FIGURE 23

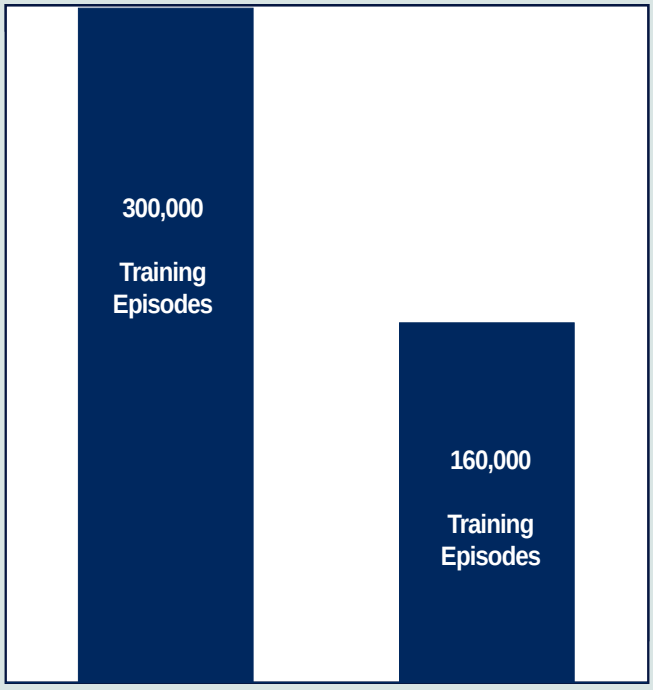


These results are supported by data from surveys of the general population. Surveys of former students also indicate ongoing training needs.[22]

These survey estimates include some adults intending to pursue a bachelor or graduate degree and others with continuing education plans not related to work. Inevitably, some individuals' expectations will be unfulfilled, and others will engage in training that they do not currently foresee.

FIGURE 24

Demand and Supply for Skills Upgrading



Demand by Employers and Workers Training Episodes Per Year

Current Supply of Training Episodes Per Year at Community and Technical Colleges and Private Career Schools

Taking the employers' estimates of the needs for the current workforce as a starting point, some idea of the approximate demand can be constructed. However, not all of the need identified by employers will be met in a single year. If training to meet current identified needs is spread over a 3-year period, then these figures taken together indicate a demand for retraining or upgrading the skills of roughly 300,000 current workers per year. Following demographic forecasts, that need will rise by more than 1.6 percent per year as the adult population grows, even if there is no increase in the rate of changing skill requirements.

A significant factor in the need for upgrading is the continued growth and change in the use of computer technology, which results in a demand for both initial training and repeated upgrading of skills.[23] Employer responses indicate that nearly half (48 percent) of all nonsupervisory jobs now involve the use of computers.

At present, community and technical colleges and private career schools supply about 160,000 completed training episodes per year.[24] (See Figure 24.)

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[22] *Workforce Training Results — 1998,* WTECB.

[23] When surveyed in the fall of 1997, 80 percent of community and technical college vocational students who had left school in 1995-96 indicated they had substantial interest in additional training. Eighty percent of those were interested in training in computer skills.

[24] A training "episode" as used here is any amount of formal classroom training. It might be best thought of as a class, course or program, or a group or sequence thereof taken simultaneously or consecutively.

Community and technical colleges have an annual training enrollment head count of 145,000 students, counting students self-identified as pursuing training for the purposes of job preparation and skill upgrading. Roughly a quarter of these students, however, leave school before completing a substantial amount of training; many others do not complete the training and return the next year. Community and technical colleges estimate there are about 120,000 completed training episodes per year.[25] An estimated 15,000 additional episodes result from nontransferring academic students and from workforce-related basic skills students. About 25,000 of these 135,000 completed episodes include the award of a degree or certificate.

Licensed private vocational schools enroll approximately 35,000 students in degree and nondegree programs and provide approximately 25,000 completed training episodes per year.

In addition, many vendors who are not licensed schools provide short-term training classes in a wide range of skills and specialties. For example, a great deal of software training is carried out in this way. No reliable estimates exist for the amount of this training.[26]

This rough estimate indicates a substantial gap between an estimated demand for classroom training (about 300,000 incumbent workers per year) and the present supply of roughly 160,000 training episodes. This gap will be particularly important over the next ten years as the baby boom echo sharply increases the number of young adults in the prime training ages, and employers need to replace the skills of the first wave of retiring baby boomers. As noted, any increase in the rate at which skill requirements change will widen this gap. Because of the imprecision of these estimates, this report makes no precise forecast of the shortfall in capacity for worker skill upgrading.

Dislocated Workers

Forecasts based on participation rates and demographics are not appropriate in the case of programs for dislocated workers. It is true that the larger the workforce, the larger the number of dislocated workers, all other things being equal. But the modern dynamics of industrial restructuring are not necessarily connected in any way to the age distribution of the population. Despite the expanding economy, dislocation of workers due to economic restructuring has continued.

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[25] Maintaining community and technical college participation rates would increase skills upgrading in the year 2003-04 by about 17,000 completed vocational episodes, and less than 1,000 additional academic episodes that do not result in a degree.

[26] The wording of the HECB and WTECB survey questions is likely to have excluded much of this training in the responses received.

Based on federal Current Population Survey data for Washington for the last business cycle, the number of dislocated workers falls to about half of its peak level during strong economic growth. But significant dislocations continue, as sectors and communities do not share in growth evenly, and restructuring and downsizing continue throughout the business cycle. Inevitably, another downturn in the business cycle will occur sometime in the future. At that time, based on past experience, we can expect an approximate doubling in the number of dislocated workers from the present time.

Definitions of dislocated workers vary from program to program and often involve information not readily available. Many dislocated workers receive services from more than one program, and many who would be eligible for targeted services never apply at all. WTECB, ESD, and other state agencies are currently engaged in a project to develop a better count of the total number of dislocated workers in the state and of the number who likely need retraining services.

In 1995, ESD estimated that there were about 60,000 dislocated workers in Washington. The national literature indicates that about one-third of dislocated workers will take advantage of retraining if it is made available. Based on these numbers, the previous "Gap Analysis" estimated that in 1995 there were about 20,000 dislocated workers in Washington who would benefit from and would take advantage of retraining.

During the 1996-97 year, targeted public programs, primarily the Worker Retraining Program (ESHB 1988) and JTPA III, together served approximately 23,000 dislocated workers. Many of these workers received employment services other than retraining. Precise counts are very difficult because programs coordinate services to some of the same individuals and because program eligibility for some programs includes persons who are not dislocated workers. Also, some dislocated workers receive training services without help from targeted programs, with combinations of private resources and generally available public programs such as Pell grants.

During 1996-97:

- JTPA Title III served 16,255 dislocated workers, including some who received other employment-related services, but not training.[27]

[27] The JTPA figures include federal program participants under the North American Free Trade Adjustment Assistance Act.

- Community and technical colleges enrolled 12,000 workers under the Worker Retraining Program. Most were dislocated, however, some were unemployed workers who were eligible for the program, but who did not meet the program's definition of dislocated.

- Tuition waivers at community and technical colleges for 542 former workers and workers spouses under the Timber Salmon Retraining Benefits Program (Dislocated Natural Resource Worker Program).

The supply of retraining opportunities may sharply decline in the near future. Funding for the state Worker Retraining Program expires June 30, 1999. This is the largest source of funding in the state for dislocated worker retraining.

Job Skills Program

JSP is a WTECB-administered state program designed to provide customized employee training for particular employers and job openings. JSP can provide training for new hires, skills upgrading of current workers when it will result in job growth, and retraining to prevent layoffs. The vast majority of this training is conducted at community and technical colleges and is, therefore, included in the FTE and enrollment counts above. In the 1995-97 biennium, the program trained 2,531 workers. Twenty-eight percent of the trainees were incumbent workers, and the rest were new hires.

Training customized to meet the needs of a particular employer can also be delivered through other programs. These other programs include the Worker Retraining Program (ESHB 1988), JTPA Title III, and the State Board for Community and Technical Colleges Workforce Development Fund. The colleges also supply customized training to employers that contract to pay the entire cost of the training. However, JSP is the only state-funded program with employer-customized training as its primary purpose, and the Worker Retraining Program and the Job Training Partnership Act can only provide training for certain categories of individuals.

Current state appropriation for JSP is one-third the level of funding in the 1993-95 biennium. On a per capita basis, funding is about one-tenth the national average among the 47 states with such a program.[28] A recent assessment of state economic development efforts recommended more than a tenfold increase in state expenditures on customized training.

[28] Steve Duscha Advisories.

Adults With Barriers to Employment

This section of the report analyzes the workforce training supply and demand for two major groups of adults with barriers to employment: the economically disadvantaged (who generally lack work experience that employers seek in new hires) and adults lacking in basic skills. Some individuals have multiple barriers and may, therefore, be included in both of these groups.

Economically Disadvantaged

In order to analyze the economically disadvantaged population, this report adopts the federal definition used by JTPA. Roughly speaking, the economically disadvantaged include those whose household income is about $15,800 or less per year for a family of three.[29]

Based on Census data for Washington, there are approximately 250,000 adults under age 56 who meet this definition who do not have a postsecondary degree.[30] Nearly half (46 percent) of these 250,000 adults are employed at least part-time. About one-third are enrolled in classroom education at some point during the year. Some unknown number of disadvantaged adults will pass out of temporary hard times without additional assistance beyond unemployment compensation, public assistance benefits, and job information. Others, particularly younger adults, are temporarily poor while participating in education or training.

An adequate supply of workforce training will reduce, but not eliminate, the proportion of low income families. Beyond the availability of training, other policies are needed to reduce the number of low income households.

[29] The guidelines are scaled to family size, and welfare and unemployment compensation are not included as income in the calculation.

[30] These individuals report they are able to work. This figure does not include those in institutions or in military service.

Supply of Training

The following list estimates present education and training services for economically disadvantaged adults.

- Financial aid for about 27,000 disadvantaged students at community and technical colleges. Some of these students also receive support services from JTPA or from Temporary Assistance to Needy Families (TANF).
- Training without financial aid for 14,000 disadvantaged students at community and technical colleges.
- Classroom training by other providers with JTPA assistance, including tuition support for 4,200 individuals.
- On-the-Job Training (OJT) through JTPA for 1,500 individuals.
- Other training or experience to enhance workplace or basic skills for many of the remaining 3,000 JTPA participants.[31]
- Community and technical college workforce-related General Equivalency Diploma (GED), Even Start, English-as-a-Second Language (ESL), and Adult Basic Education (ABE) instruction for roughly 17,000 individuals not counted in the above categories. (Literacy services not related to work were provided to over 47,000 individuals)
- Publicly funded workforce-related ESL outside of community and technical colleges for roughly 5,600 individuals.
- Workforce-related adult basic education through community-based organizations for roughly 7,000 individuals.

In addition, economically disadvantaged adults receive a significant share of the benefits from the following programs:

- Need-based financial aid at public 4-year colleges and universities for about 40,000 individuals.
- Education at public 4-year colleges and universities without financial aid.
- Need-based financial aid at private 4-year colleges and universities for 18,000 individuals.
- Need-based financial aid while attending private career schools for 7,000 individuals.

Unknown numbers of the economically disadvantaged pay for training entirely on their own or are provided training by their employers or through nonprofit funding sources.

A significant number of individuals are double counted in this list because they receive more than one of these services during the year.

[31] Besides education and training, JTPA provides other services such as job search assistance and support services.

However, a reasonable estimate would be that in excess of 85,000 economically disadvantaged adults receive some workforce-related occupational or basic skills training each year. This corresponds well to the Census-based estimate of one-third of the economically disadvantaged involved in education, despite some differences between what each count includes. Many individuals also receive other types of employment-related services, such as job search and placement assistance, through JTPA or other programs.

Support services are important to enable disadvantaged adults to participate in vocational training. Such services include income support and child care. Regular and extended unemployment benefits, Pell grants, TANF, and the Worker Retraining Program (ESHB 1988) are all important sources of income support for those engaged in training. Several programs, notably JTPA, Worker Retraining, and TANF, provide child care funding.

It is unclear how many disadvantaged adults should be served by the workforce development system each year. It would be unreasonable to expect to serve the entire existing population of economically disadvantaged adults in a single year, taking care of the backlog all at once. Simply providing a service to one household member during the year is often insufficient to boost a household out of low income status. Nor do all of those who are economically disadvantaged want to take part. On the other hand, while many people leave low-income status every year, additional people will be added to the low income adult population as they age into the workforce, suffer declining circumstances, or migrate from other states or nations. Existing research is inadequate to quantify all of these factors.

WTECB's *Workforce Training Results* examined the needs of potential training participants who had not enrolled in one of the training programs included in the study. The potential participants examined were individuals who had registered with the Employment Service to search for a job and were mostly economically disadvantaged and lacking postsecondary education or training. Their survey results show that a lack of information about federal programs or eligibility for financial assistance is a frequently cited barrier to enrolling in training.

Changing Supply

There is a clear need to continue to increase the skills of the economically disadvantaged through vocational training. It is difficult, however, to set firm targets for changing the supply of training for the disadvantaged given the lack of better evidence on actual demand.

Policies to expand the general availability of training (e.g., expansion of community and technical college enrollment) will benefit significant numbers of the economically disadvantaged if accompanied by the expansion of financial aid. In addition,

increased training for populations that overlap with the disadvantaged (e.g., training for out-of-school youth or dislocated workers) will also benefit many individuals who are disadvantaged.

Adults Lacking in Basic Skills

Demand

In 1992, Washington administered the State Adult Literacy Survey (SALS), a performance-based skill assessment, to a sample of the state's adult population. According to SALS, there are between 200,000 and 500,000 adults who are deficient at the most basic skill level tested (Level 1). (An estimated 200,000 would get a failing grade on the lowest level test section, while 500,000 would fail at least one question.) Level 1 questions require adults to perform simple, routine tasks involving brief texts, such as totalling an entry or a deposit slip, locating the time and place of a meeting on a form, and identifying a piece of specific information in a brief news article.

Adult Basic Skills Education

Community and technical colleges provide a substantial amount of work-related ABE and GED training, serving about 17,100 persons per year. (Work-related basic skills does not include instruction intended solely for personal enrichment.) Community-based literacy programs serve about 7,000 persons per year in related literacy programs. This does not count either basic skills education provided as a subsidiary part of JTPA programs or developmental programs to prepare students for college level work. There are also significant amounts of workplace literacy activities provided by employers. Ten percent of employers offer classroom basic skills instruction to some employees.

Major changes in K-12 education or changes in interstate or international migration could affect the demand for basic skills education. In the absence of reliable forecasts of such changes, it is appropriate to assume that current per capita levels of need are likely to persist.

Limited English Proficiency

Based on the 1990 Census, approximately 60,000 adults (ages 19-64) in the state report they do not speak English "well." Approximately 15,000 people per year participate in workforce-related ESL instruction, more than half through the community and technical colleges. This does not count ESL education included as a subsidiary part of either occupational programs at community and technical colleges or JTPA programs. Community-based organizations also receive funding to provide ESL services under Refugee Assistance and Adult Immigrant Education programs. It is not possible to accurately forecast future demand for ESL services because it is unknown at what rate current programs remedy English language deficiencies and due to uncertainty about future levels of immigration. However, significant demand for these services will likely continue.

General Equivalency Diploma

In 1996, over 20,000 Washingtonians earned GEDs. A majority of all GEDs are granted to persons under the age of 25.

Analysis of demographic and educational forecasts do not provide any indication of a major shift in the role or function of the GED in education and workforce training. And evidence about the effectiveness of a GED as a workplace credential is inconclusive.

Pending significant changes in secondary school retention or other training efforts, we expect the present age-specific participation rates to continue. Thus, annual GED awards are likely to rise to exceed 23,500 in 2003-04 and approach 27,000 in 2012-13.

Even Start Program

Even Start is a state and federally funded family support program for parents with educational attainment scores below the eighth-grade level and children who are at risk of school failure. Even Start serves approximately 500 adults in Washington each year. In addition to parenting sessions, parents take ABE, ESL, or GED preparation courses.

Increasing Supply

It is unknown exactly how many people are served per year by all the adult literacy programs in the state. Besides the programs discussed here, there are programs provided by the Department of Social and Health Services, the Department of Corrections, and by other state agencies. A 1992 study at the University of Washington estimated that there are over 60,000 participants per year in public adult literacy programs.[32]

Moreover, less is known about the demand for adult basic skills instruction and about program effectiveness than is known for other areas of training. Lacking better information, a baseline projection using current services per capita may be appropriate. Currently, community and technical college programs reach over 17,000 students per year with a combination of work-related ABE, ESL, and GED courses, utilizing over 5,000 FTEs per year. Keeping pace with the projected growth in adult population (adjusted for age) would result in annual growth of less than 2 percent per year in enrollment and, therefore, about 85 additional FTEs per year.

[32] *Adult Basic Skills Instruction Services and Needs in Washington*, William Zumeta, 1992.

Recommended Strategies

Major Strategies for Bridging the Gaps and Costs

The Workforce Training and Education Coordinating Board recommends two basic strategies to reduce the gaps between the supply and demand for training:

1. Changing the way we do business in order to increase efficiency and effectiveness.

2. Growth in supply in order to meet demand. Many of the recommendations to change the way we do business were first made by WTECB in its December 1997 report, "Washington's Workforce Training System: Recommendations for Efficiency and Effectiveness." As indicated below, most of these recommendations do not require appropriations beyond current budget levels.

Youth

Changing the Way We Do Business

Education Reform

The state should continue education reform. Creating an educational system characterized by high academic standards and performance-based assessment of student skills and knowledge should improve the basic academic skills of future high school completers. Improving basic skills will reduce remediation costs currently born in the postsecondary system and "second-chance" programs for the disadvantaged.

Reform efforts must fully include student learning related to Goals 3 and 4, as established by the Legislature in 1993, in order to meet employer concerns about job applicants' job-specific skills, problem solving abilities, and work habits. Those Goals are:

Goal 3: that students are able to think analytically, logically and creatively, and integrate experience and knowledge to form reasoned judgments and solve problems; and

Goal 4: that students are able to understand the importance of work and how performance, effort, and decisions directly affect future career and educational opportunities.

The accountability system developed as part of education reform must provide an incentive for schools to make progress in achieving Goals 3 and 4, as well as Goals 1 and 2.

Cost: The current biennial appropriation for education reform is $40,622,000.

School-to-Work Transition

The state should continue the development of a School-to-Work Transition system (STWT). A STWT system consists of several key components, including:

1. Combining vocational and academic education.

2. Integrating classroom and work-based learning.

3. Articulating K-12 education with continued postsecondary education.

Creating a STWT system should increase the workplace competencies and occupational skills of high school completers, enhance the relevance of education to at-risk students, and quicken the pace at which students enter and complete postsecondary education and training.

Cost: The state has been authorized to receive $6,450,000 in federal funds for STWT over the next two years. In addition, WTECB recommends restoring the separate appropriation of state general fund dollars for STWT that are currently part of a block grant (no net fiscal impact).

Vocational Education

In order to further improve the effectiveness of vocational training, WTECB recommends that the K-12 system:

1. Increase the academic content of vocational programs.

2. Increase the use of career clusters that broaden student options.

3. Improve the data system so that schools and policymakers may have postschool results data for schools across the state.

Cost: The initial steps for 1 and 2 are already under development within the current budget appropriated for the Office of the Superintendent of Public Instruction. It is unknown at this time whether or not additional funds will be necessary for subsequent development. Number 3, providing postschool results across the state, would cost approximately $50,000 per year in addition to the current $150,000 expended annually on postschool data.

Growth

Funding for Increasing Numbers of Secondary Vocational-Technical Students

By the 2003-04 school year, an additional 9,880 secondary vocational-technical FTEs will be required to match the expected population growth in that age cohort. Currently, roughly $4,000 is expended per FTE.

Cost: Up to $8 million additional funding each year, totalling $39.5 million funding above the 1996-97 level by 2003-04 (constant dollars not adjusted for inflation).

Adults

Changing the Way We Do Business

Compression of Vocational Training

The state's community and technical colleges should shorten the time participants spend out of the workforce during vocational training. This would not only shorten the time participants spend out of the workforce, but also the time employers must wait for training to be completed. In order to compress training:

1. The State Board for Community and Technical Colleges (SBCTC) should increase work-based learning opportunities and specifically develop incentives and models to increase the use of work-based learning and wage progression models that provide initial training sufficient to obtain entry-level employment, training on the job aimed at specific objectives, and further education leading to credentials that provide opportunities for advancement.

2. SBCTC should expand the use of skill standards to determine the minimum length of training required for entry-level employment.

3. SBCTC should develop competency-based programs that enable students to progress at their own pace.

4. SBCTC should increase the use of credit for prior learning to allow students to enter programs at the level of their knowledge and skills.

Cost: It is not known at this time whether these steps require additional funding beyond the current level of appropriations.

Job-Linked Training

Training that is customized to meet employer needs for specific job openings is one way to help ensure that training resources are used effectively and efficiently. Compared to other states, Washington invests very little public money in training that is linked to specific job openings.

The state should ensure funding for customized training linked to specific job openings. Such funding could provide retraining for dislocated workers, skills upgrading for incumbent workers, and provide training for workers with barriers to employment, including low-income workers and those on welfare, among others. As part of this effort, SBCTC should develop ways to ensure the use of current college funding and programs for job-linked training.

WTECB will work with business, labor, the community and technical colleges, and other stakeholders to develop a proposal for consideration by the Governor and Legislature.

Cost: To be determined as a proposal is developed.

One-Stop Career Centers

The state should proceed with the development of a system of One-Stop Career Centers. One-Stop Career Centers will provide universal and consistent access to basic employment-related services such as assessment and counseling, information about government programs, labor market information, consumer information about training provider results, and job placement assistance. Such a system will improve both the effectiveness and efficiency of service. One-Stop Career Centers will increase efficiency through more effective coordination of what are now separate categorical programs. Better labor market information, job placement assistance, and consumer reports will help customers find occupations with growing demand and training that best prepares them to meet employer needs.

WTECB specifically recommends that:

- The Executive Policy Council of the state's One-Stop Career Center system should establish policies to:

    1. Implement a shared information system that can, by letting program operators know what services participants have received from other programs, help eliminate any wasteful duplication of services.

    2. Implement common intake, assessment, and other services to the maximum reasonable extent in order to prevent the duplication of these services when a person moves from one program to another.

- The agencies of the state training system and the Executive Policy Council of the state's One-Stop Career Center system should put in place a Consumer Report System that will let customers know the results of training programs so that they may avoid programs that are not likely to produce the results they want.

Cost: The state has been authorized to receive $9,450,000 in federal funds for One-Stop Career Centers over a 3-year period. How much funding beyond federal dollars will be necessary, if any, is unknown at this time.

Growth

Access to Community and Technical College Vocational Training

In order to match employer demand for employees with occupational skills, the number of community and technical college vocational FTEs should increase. Our recommendation begins with the 1999-2000 school year to allow time for the college system and the state budgetary process to respond to the recommendation. Just to maintain recent participation, rates will require an additional 8,000 FTEs by the 2003-04 school year (an average of 1,600 more each year for 5 years). However, there is strong evidence that current participation rates do not meet labor market demand for employees with postsecondary vocational credentials. Gradually reducing the labor market gap will require an additional 9,600 FTEs by 2003-04 beginning with the 1999-2000 school year (an average of 1,920 more each year). This brings the total of additional FTEs to 17,600 over 5 years or an average of 3,520 more FTEs each year.

Cost: To maintain current participation rates will require approximately $6.6 million in additional funding per year—$6.6 million the first year, $13.2 million the second year, and $33.0 million by the fifth year in additional state funding. These estimates assume current rates of state-supported FTEs (91 percent of all workforce FTEs), current local tuition collection rates of about $1,400 per FTE, and are in constant 1998 dollars, not adjusted for future inflation. To both maintain current participation rates and reduce the gap in meeting labor market demand will require approximately $14.4 million in additional funding per year; $72.2 million by the fifth year in additional funding.

Private Investments and Public Tax Incentives

Bridging the supply/demand gap for worker training is not solely the responsibility of the public sector. Employers and employees should increase their own investments in maintaining and upgrading the skills of the current workforce. In order to stimulate this private sector behavior, the state should consider tax incentives for increased investments in training.

Cost: The cost to the state of tax incentives for training is highly variable and can be set at a level to match state policy and budgetary goals. WTECB supported the Governor's FY 1999 supplemental budget request of $10 million in B&O tax credits for worker training.

Recommendations to Modify Adult Basic Skills Education and Job Training Partnership Act Title II

	Adult Basic Education	Job Training Partnership Act Title II
Performance-based Funding	The Adult Education Advisory Council should develop and propose one or more work-related adult basic skills program performance goals to be included as part of the state's performance management processes, including those associated with current legislative requirements.	The Employment Security Department (ESD) should require the Job Training Partnership Act (JTPA) Service Delivery Areas to document procedures for considering provider performance in letting and terminating contracts, and providing direct service.
Integration With Work and Vocational Training	The Office of Adult Literacy should take a number of specific actions (enumerated in the Report) to advance the integration of literacy with vocational training and workplace experience, including ways of moving funds to integrated programs.	ESD and the State Job Training Coordinating Council (SJTCC) should include in the next state plan that basic skills instruction should be integrated with a workplace context and occupational skills training in all but exceptional circumstances. WTECB will require that literacy projects funded by JTPA 8% be integrated with a workplace context and occupational skills training. ESD and SJTCC should include in the state plan a new performance standard of increasing participation in occupational skills training by 5 percent in each of the next 2 years.
Coordination of Adult Basic Skills Programs	SBCTC should write a new Washington State Plan for Adult Literacy. (No plan has been written since 1989.)	

Cost: These recommendations can be implemented within current budgets.

Individuals With Barriers to Employment

Changing the Way We Do Business

In our report, "Washington's Workforce Training System: Recommendations for Efficiency and Effectiveness," WTECB made several recommendations to improve the two major programs that serve individuals with barriers: Adult Basic Skills Education and the Job Training Partnership Act Title II. The recommendations focus on linking funding to performance, increasing the use of classroom and work-based vocational training, and improving the coordination of Adult Basic Skills Education.

Growth

Funding for Increasing Numbers of Adult Basic Skills Students

In order to maintain current community and technical college participation rates for individuals in work-related adult basic skills education, an additional 420 FTEs will be required over a 5-year period beginning with the 1999-2000 school year and ending with 2003-04. This is in addition to the above estimate for the cost of increasing access to community and technical college vocational training.

Cost: To maintain current participation rates will require approximately $270,000 in additional funding per year; $1,352,000 by the fifth year in additional state funding.

Systemwide Recommendations

Changing the Way We Do Business

Two recommendations to reduce the gaps between the supply and demand for training run across the training system, benefiting both youth and adults.

Regional Alliances

To date, most of the state's efforts at coordination have focused on state-level operations, on improving alignment of the programs of the state agencies of the workforce training and education system. To be fully effective, state-level planning and coordination must be balanced with accommodation of varying regional conditions.

One way to ensure both statewide coordination and regional responsiveness is to encourage workforce development programs to cooperate with business and labor in regional alliances. Regional alliances that reflect the state-level tripartite public/private partnership could facilitate this work. Such partnerships could assure that the voice of the customer would inform the planning, evaluation, and policy decisions at the regional level. They could possibly reduce the current number of advisory boards and committees.

Regional workforce alliances could assess regional needs and prioritize investment so that it is responsive. Economic changes could be reflected in program planning, such as increase in

investment in dislocated worker training following a major industry closure or reduced placement expectations for a program in an economically depressed local economy. Differences in the demographics of a region could be addressed as well: communities with low literacy rates might prioritize investments in adult basic skills, for example. And, regional workforce alliances could develop the relationships necessary to increase cooperation among programs delivered by different state agencies.

Regional alliances would not eliminate the need for private sector guidance for particular occupational skill programs or courses of study. The regional alliances could share their needs assessment with service-providing programs, agree on the role of each program to meet those needs, assure that overlaps of service are eliminated and gaps filled, and hold programs to common, regionally appropriate performance expectations.

In the course of creating these alliances, regions would also provide a unifying "point of contact" for private sector partners, strengthening the voice of the customer in strategic planning and accountability while lessening the burden imposed by large numbers of independent planning committees. Similarly, a unified planning and coordination alliance could ensure that programs avoid duplication of services (e.g., job development) and costly investments in duplicative technology in particular.

It should be noted that in many areas of the state efforts are already underway to create something like a workforce alliance. Few have the breadth needed to serve the entire system: some do not include secondary vocational education; others focus on educational institutions and are only slightly connected to private sector training. In order to determine the breadth of partnership necessary to fulfill a regional role in the state's workforce development system, the state should test the value added by regional workforce alliances.

1. The Governor and Legislature should encourage and support the development of regional workforce alliances by supporting pilot projects in from one to four areas of the state. These projects could provide models for the development of regional workforce alliances across the state.

2. The One-Stop Career Center Executive Policy Council should consider providing incentives to local partnerships to support these pilots. Similarly, leaders of other workforce development initiatives, such as WorkFirst, should consider providing incentives to local programs to engage in these pilots.

Cost: Piloting voluntary regional alliances can be accomplished within current budgets.

Vertical Integration: Linking Programs for Sequential Skill Development

Customers of the workforce development system are sometimes unable to move smoothly from one program to another or from a program to employment. Too many of them end up duplicating lessons taught in more than one program or completing one program without acquiring the skills required for entry into the next level of training. This inefficiency results in overlap and gaps between insufficiently coordinated programs.

Programs should be linked sequentially to ensure that students will be fully prepared by one program for the next. Using skill standards to define the gradations of skill and education required for progress in an occupation will help all programs align and clarify for any customer what skills and knowledge will be covered by a class or course.

- Operating agencies in the workforce development system should ensure that all programs end in a competency-based credential fully accepted by the next level of learning, and that students are fully informed of the articulated ladder of certifications.

- WTECB will establish a working committee (members to include labor, business, OSPI, SBCTC, ESD, DSHS, PICs, community organizations, STWT consortia). The committee will review efforts to identify and assess work-related competencies for entry-level workers and to determine next steps to facilitate development of a credential to be issued upon attaining those competencies.

Cost: The initial development of a credential of work-readiness can be completed within current budgets. What additional costs, if any, would be required for implementation of the credential is not known at this time

Workforce Training

Supply, Demand, and Gaps

1998

Budget

State Support Share of Total Workforce Student FTE

In this report, demand for community and technical college workforce training is forecast in total FTEs, including both state-supported and self-supporting components, excluding only some contract programs for foreign students.

- State supported ..... 91 percent
- Contract supported..... 7 percent
- Student supported ..... 2 percent

Financial Aid

Financial aid is necessary for a significant portion of those seeking workforce training, in particular for adults with barriers and for youth. Financial aid includes federal and state grants, loans, and work-study jobs. Expansion of training programs needs to include corresponding financial aid availability. In the 1996-97 year, all students at the community and technical colleges received the following amounts of support:

Federal Grants

- Pell .....$29.5 million
- Work-Study ..... $4.3 million
  (includes about 20 percent employer match, mostly off campus)

State Grants

- State Need Grant .....$16.9 million
- Work-Study .....$4.9 million
  (includes match but is mostly on campus)

Federal Loans

- Stafford .....$8.1 million

These totals are for all community and technical college students. Separate data are not currently available for students in workforce training programs, but they probably receive about half of this aid. Counting academic associate students who move directly into employment would significantly raise the workforce share of this aid total.

Maintaining the current level of state financial aid per student for the enrollment levels recommended in this report would require an annual increase of about $1.1 million per year, above the rate of inflation.

Expansion of Private Career School enrollment will also increase the number of students in need of and qualified for financial aid.

Methodological Issues

There are serious technical difficulties in quantitative analysis of the supply and demand for workforce training. This is true for employers' demand for skilled workers, for workers' demand for training, and for the actual supply situation for skills. Some difficulties are caused by data that is not collected or not standardized. But many problems arise from the nature of the labor market, which is not a simple supply and demand situation. Further, the Washington State market is not a closed system, but interacts with national and international markets and conditions.

Data

We have imperfect understandings of how many and which kind of jobs require which levels of education or skill. Several different coding systems are used in the available data for jobs, for worker training, and for skill levels. With the exception of the decennial Census, comprehensive survey data do not exist, and the Census was not designed to answer detailed labor market questions. There is not adequate Washington-specific data about the level of training required to enter specific occupations, nor about how the incumbents in occupations acquired their essential job skills, nor about how those skills relate to wages. Federal data on these questions are not updated frequently. There is only limited data on the level of employer-provided training and on many private training providers. Other relevant topics, such as the connection between worker training and worker benefits such as health insurance, are also beyond the scope of available data. Periodic surveys specifically addressing these issues would greatly improve the accuracy of labor market analyses.

Structurally, in real labor markets both employers and workers have imperfect information about available jobs, workers, and training. They also face high transaction costs and risks in changing jobs or hiring new workers. This makes it difficult to determine economic supply and demand relationships, especially when other factors, like the business cycle, worker demographics, and public economic expectations, are continually shifting. In addition, jobs, workers, and employers are all "heterogeneous." Different jobs in the same occupation require different skills. Each worker possesses a set of skills, attributes, and preferences, which are different from other workers. So in any given occupation, many workers may have the option of shifting to a different occupation, but different workers have different options. Different employers have different strategies for expanding or shrinking their workforce, and for investing in employee training.

In addition, substantial net in-migration from other states continues. Based on Census data covering 1985-1990, net migration has a higher proportion of college graduates and high school noncompleters in comparison with non-migrating Washingtonians. How labor market conditions influence the composition and size of this migration is difficult to determine.

Further, the potential workforce includes a significant but fluctuating proportion of individuals who are temporarily out of the workforce for a variety of reasons. This proportion undoubtedly changes in response to economic, demographic, and social conditions, but the relationship is not well quantified for Washington State.

Employers' and workers' answers to survey questions about demand and supply can be inaccurate due to problems in accurately recalling the past and predicting the future.

Workforce Training: Supply, Demand, and Gaps Customer Satisfaction Survey

The Workforce Training and Education Coordinating Board is committed to high quality customer satisfaction and continuous improvement. You can help us meet our commitment by completing this form, detaching it, and mailing it in. Please circle the words that best answer the following questions. In the space provided please elaborate on your response, if appropriate. Alternatively, you may access a form on our website and complete it electronically.

1. How **useful** are the ideas presented in this report?	Not Useful	Somewhat Useful	Very Useful
2. How **clear** are the ideas presented in this report?	Not Clear	Somewhat Clear	Very Clear
3. How **useful** are the recommendations?	Not Useful	Somewhat Useful	Very Useful
4. How **clear** are the recommendations?	Not Clear	Somewhat Clear	Very Clear
5. How complete is the information?	Not Complete	Somewhat Complete	Very Complete
6. How accurate is the information?	Not Accurate	Somewhat Accurate	Very Accurate
7. How is the information presented?	Not Enough Detail	Right Amount Detail	Too Much Detail
8. How is the length of the document?	Too Short	About Right	Too Long
9. Are there enough charts and graphs mixed in with the text?	Not Enough Charts	Good Balance	Too Many Charts

10. Would you like to see this report on the Internet? Yes ___ No ___

11. Do you want additional copies of this report? Yes ___ Quantity _____ No ___
(If yes, please provide us with your name and address on the next page.)

12. How did you expect to use this report? How have you used this report?

13. How can this report be made more useful in future editions? What additional information would you like to see in subsequent reports?

Please Tell Us About Yourself

JOB TITLE	SECTOR	YOUR ZIP CODE
	Public ___ Private ___ Nonprofit ___	

Does your organization provide training services to clients? Yes ___ No ___

Would you like to be contacted about future WTECB initiatives in this field? Yes ___ No ___

If we have any questions about what you have written here, may we contact you? Yes ___ No ___
(If you answered "yes" to this question or question #11 on previous page, please fill out the following.

NAME	ADDRESS	
TELEPHONE #	FAX#	EMAIL ADDRESS